Journal OF THE AMERICAN DIETETIC ASSOCIATION

VOL. 25, NO. 3 MARCH 1949

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Mental Hygiene at the International Level[1]

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Consulting Psychiatrist, Massachusetts Society for Mental Hygiene, and Assistant in Psychiatry, Harvard University School of Medicine, Boston

IN TODAY'S troublous times, it is not only the confirmed cynic who occasionally wonders what profits the continuing quest for more knowledge and skill in scientific and cultural fields, or even in the field of saving human life, when our very civilization is under threat of extinction with consequent loss of all the gains which have been so laboriously made. Civilizations have ere now risen, flourished, and fallen again—history has been known to repeat itself. These are not pleasant thoughts. In the course of years, man has made of the physical sciences an incredibly efficient servant. He has loosened the limitations of space and time and has increased his physical powers and efficiency many fold. Through it all, however, man himself has plodded his own haphazard way. The social sciences have by no means kept pace with the physical ones, nor has the social and spiritual stature of man grown in keeping with his rapidly increasing potency.

Thus it is that today mankind is momentarily threatening to bring about his own destruction by the hands of the servant which he has made. It appears that man himself is the weakest link in the chain with which he would bind himself to a high destiny, for, since no law can be more useful than the zeal of its enforcing agents permits, similarly no political organization or federation can be more potent than the desires of mankind himself allow. Intolerance, suspicion, and hatred will circumvent or overthrow even the most elaborate barriers. Man himself is the final touchstone. The matter has been well put in the preamble to the Constitution of the United Nations Educational, Social and Cultural Organization: ". . . since wars originate in the minds of men, it is in the minds of men that the defenses of peace must be constructed."

It is natural that among the leaders in consideration of this vital problem there should be those whose interests lie along the lines of man's own nature and his relationship with his fellows, namely the students and practitioners of the social and psychological sciences. Workers in the field of mental hygiene, particularly, have seen in this crucial worldwide problem many of the elements with which they have been concerned in problems of individuals or of groups. To see how mental hygiene has now come to hope and to dare to function on an international level, let us trace briefly its development.

[1] Presented at the 31st Annual Meeting of the American Dietetic Association in Boston, on October 19, 1948.

DEVELOPMENT OF MENTAL HYGIENE

The spiritual father of mental hygiene was the medical specialty of psychiatry, with which it is still closely allied in philosophy and function. Psychiatry which, as a scientific discipline, is itself one of the youngest branches of medicine has in its own course gone through considerable widening of its area of interest. At first it concerned itself almost solely with the psychotic or insane, in the days when the "alienist" treated the "lunatic." Gradually it extended itself to include less major disturbances of thought and emotion such as the psychoneuroses and situational and behavior maladjustments. It was meanwhile passing steadily from the original mystic and poorly formed theoretical concepts to more clearly formulated and scientific knowledge. With both of these trends, psychiatry has in large measure left the confines of the "insane asylum" or mental hospital and has come to take an active part in the personal adjustment of the so-called "normal" population. It is in this area, indeed, that it has proved itself even more significant than in its dealings with those individuals who have already lost their grasp of reality in passing over the line into psychosis.

Mental hygiene, similarly, has passed through a succession of phases. In its inception, less than fifty years ago, it was concerned chiefly with the improvement of hospital facilities for the care of grossly mentally ill patients. Gradually it came to be seen that the care of the mentally ill was not exclusively a matter of hospitalization. Out-patient clinics came into being for the patient who had been discharged from a mental hospital, and for the early treatment of the patient who would otherwise be on the road to eventual hospitalization. A large portion of the work of mental hygiene is still concerned with matters of hospital care and of out-patient

treatment, and properly so, since such facilities still leave much to be desired.

However, as psychiatric information regarding the origins of mental illness has accumulated, it has become apparent that mental illness does not come about by spontaneous generation, but by the interaction of varying but definite forces. Work with adults in the clinical setting has demonstrated repeatedly the significance of early environmental factors both in the etiology of psychoses and more particularly in that of psychoneuroses. Actually, it has become progressively more clear that an individual's early experiences constitute the determining forces in setting the fundamental pattern of intellectual, emotional, and ideologic reaction which in turn determines in large part his response to all subsequent experience.

In the practice of child psychiatry, it has been possible to check and confirm this by study of the formative processes going on in the child himself. It was inevitable, then, that the importance of childhood experience should be increasingly emphasized, together with the necessity of making this experience an hygienic one. In determining those factors which make for sound or unsound psychologic development in the child, with vital determining force on all the future reactions of the individual, mental hygiene and psychiatry have continued to share interest. It is mental hygiene, however, which has made this field its chief interest, particularly in the consideration of and management of those forces, environmental circumstances, and habits of emotion and thinking which contribute to sound mental and emotional health in the child, and eventually in the adult.

The item of mental health is still one of the greatest unsolved problems in the entire realm of public health. Even in the United States, which is well to the top in this regard, there are more hospital beds occupied by patients with nervous and mental disorders than all other illnesses put together. According to statistics of the Office of the Surgeon General of the U. S. Public Health Service, about eight million people in the United States today, or about one-seventeenth of the population, are psychotic. Furthermore, one out of every ten persons may be expected at one time or another to be a patient in a mental hospital. These figures, thought-provoking as they are, yet do not take account of the additional 10 to 20 per cent of the population who are more or less severely crippled or incapacitated by psychoneurosis. The entire magnitude of the problem was thrown into sharp focus by such findings as those of Selective Service in which well over one-third of all rejections before induction were on the basis of neuropsychiatric disorder. In spite of this tremendous need, the facilities for care are woefully inadequate. Thus, there are less than seven hundred part-time or full-time clinics in the country operated by communities, counties, states, or the federal government, a number which should be tripled merely to meet the current need. Half of the states have no community clinic of any type. The meeting of this staggering problem has been, is, and will continue to be a major concern of the mental hygiene movement.

GROUP PSYCHODYNAMICS

At the same time, as has been mentioned above, leaders in mental hygiene have of necessity been impressed by the profound implications at the international level of the same factors which operate in the individual, for the state, the nation, and the international scene are only increasingly complex groups of *individuals*.

Another item which has even more recently entered into the picture to give some hope of mental hygiene being of significance at an international level is the development of studies in group psychology and group psychodynamics whereby it has been discovered that there are definite psychologic principles which underlie the formation and functioning of groups just as there are in the case of individuals. This concept of group psychodynamics has constituted a particularly strong link with other fields of investigation in the social sciences generally, which have become increasingly concerned with the mechanisms of group-functioning.

In other words, various disciplines of scientific thought, all of them concerned with man himself in varying aspects, have gradually approached each other as each has widened its own boundaries. Psychiatry, from its original focusing on the insane, has come to be increasingly interested in the origins of attitudes in the individual, and more recently, in the group. Mental hygiene, springing from psychiatry, has become increasingly concerned with those factors which predispose to good or to poor mental health and adjustment. The social sciences, which have always been interested in the group, have found it necessary to try to evaluate those forces which make the group operate. It is a natural and logical sequence to progress from the solitary individual to that individual making his adjustment as part of a family, then integrating himself with a social group, thence functioning as part of a state or nation.

Up to this point, the road is relatively clear, although increasingly complicated as the number of constituents and the size of the total group increases. It would seem, however, that it might be that these same psychologic principles would function in the integration of states and nations into an international body; in other words, the principles of mental hygiene might be usefully applied to the problems which the world faces at the international level. Thinking along this line has been greatly stimulated by the formation of the United Nations, although the "unity" which is the objective of those who are

interested in mental hygiene at the international level is not political unity but a spiritual integration which alone can make political institutions of any sort function successfully.

INTERNATIONAL CONGRESS ON MENTAL HEALTH

It was with this general concept in mind that the International Congress on Mental Health was convened in London from August 11 to 21, 1948. Over two thousand persons, representing fifty-six different countries, attended. The Congress itself consisted of three international conferences: the International Conference on Child Psychology, the International Conference on Medical Psychotherapy, and the International Conference on Mental Hygiene. The plan of organization and functioning of the Congress was interesting and significant.

As the initial step, centers of mental hygiene, education, and sociology throughout the world were asked to encourage and supervise the formation of "preparatory commissions" prior to this meeting. These groups were to be: not limited in number, purely voluntary in composition, informal in organization, and composed of any individuals who were interested in this general problem. Since one of the prime aims was to bring together the thinking of various disciplines on this one subject, these commissions were made up of physicians, psychiatrists, psychologists, sociologists, anthropologists, political scientists, ministers, economists, educators, social workers, nurses, lawyers, and others—in short, all those whose interests touch on the matter of mankind and his adjustment to his fellows. Each commission chose its own topics for discussion and formulated its own thinking and recommendations. Some three hundred such groups in twenty-seven countries and including some five thousand participants met during the winter and spring of 1947 and 1948. The formulations of these groups were transmitted by Regional Headquarters to the International Preparatory Commission for the International Congress on Mental Health. This Commission met in England from July 24 to August 8 to digest and discuss this material and to prepare from it an agenda for the Congress itself.

The International Conference on Mental Hygiene had as its purpose the integration of the thinking in these various fields as working toward the elaboration of better principles and methods of mental hygiene—partly to coordinate what is currently known, and largely to indicate a path for future progress. One part of the deliberations was concerned with the furtherance of better mental hygiene in the individual countries themselves much as in any international conference in any field. The second part of the deliberations was concerned with the question of "mental health and world citizenship," which was the essential theme of the conference. Again it should be emphasized that this concept of "world citizenship" was not a political one. In the words of the statement by the International Preparatory Commission, "The idea of the 'world citizen,' as here conceived, is not used in a political sense. It is rather meant to convey the notion of a 'common humanity.' It does not raise the question of a world political sovereignty, replacing or embracing the sovereignties of existing nations. Such a new sovereignty may come, but it is not the concern of this statement. We are concerned with the attitudes and ideals of groups of men in relation to one another, and with the principles and practices of mental health in relation to a world community."

The deliberations of the Congress were of necessity general, and in themselves somewhat "preparatory." It is impossible to discuss these in detail because of their broad range. Certain fundamental principles and trends of thought, however, do deserve our consideration.

PROBLEMS OF MENTAL HYGIENE IN THE WORLD COMMUNITY

The difficulties of the entire undertaking were not underestimated. It was recognized that varying cultures pose many different types of problems, dating back not only for years but for generations and centuries. Thus the entire psychologic, philosophic, and ideologic structure varies fundamentally from culture to culture, so that common denominators are extremely hard to determine. There is even variance as to what would constitute good standards of mental health. For example, in our own western culture, the principle of the fundamental worth of the individual and existence of the state to serve "the greatest good of the greatest number" is almost axiomatic. In some other cultures, however, this is by no means the case, and there is age-old tradition that any approach to such an ideal is weak, unworthy, and dishonorable. It was well recognized that any one of these blocks might prove fatal to the entire enterprise.

On the other hand, it was emphasized that psychiatric, psychologic, and sociologic studies have demonstrated clearly that the attitudes and behavior of the individual and of the group are capable of a certain amount of plasticity. It is this plasticity which makes one person differ from another and which in large part determines the sort of person that he is. It is this same plasticity which determines the emotional and psychologic complexion of the group and which in itself accounts for the very divergences of attitude from group to group. Unfortunately, the environment and upbringing which mold the individual or the group into its final form are usually disorganized, fortuitous, and without either goal or method. It should be possible to establish sound principles of training and environment and to bring these to bear upon the individual so as to make him eventually capable of satisfactory

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However, as psychiatric information regarding the origins of mental illness has accumulated, it has become apparent that mental illness does not come about by spontaneous generation, but by the interaction of varying but definite forces. Work with adults in the clinical setting has demonstrated repeatedly the significance of early environmental factors both in the etiology of psychoses and more particularly in that of psychoneuroses. Actually, it has become progressively more clear that an individual's early experiences constitute the determining forces in setting the fundamental pattern of intellectual, emotional, and ideologic reaction which in turn determines in large part his response to all subsequent experience.

In the practice of child psychiatry, it has been possible to check and confirm this by study of the formative processes going on in the child himself. It was inevitable, then, that the importance of childhood experience should be increasingly emphasized, together with the necessity of making this experience an hygienic one. In determining those factors which make for sound or unsound psychologic development in the child, with vital determining force on all the future reactions of the individual, mental hygiene and psychiatry have continued to share interest. It is mental hygiene, however, which has made this field its chief interest, particularly in the consideration of and management of those forces, environmental circumstances, and habits of emotion and thinking which contribute to sound mental and emotional health in the child, and eventually in the adult.

The item of mental health is still one of the greatest unsolved problems in the entire realm of public health. Even in the United States, which is well to the top in this regard, there are more hospital beds occupied by patients with nervous and mental disorders than all other illnesses put together. According to statistics of the Office of the Surgeon General of the U. S. Public Health Service, about eight million people in the United States today, or about one-seventeenth of the population, are psychotic. Furthermore, one out of every ten persons may be expected at one time or another to be a patient in a mental hospital. These figures, thought-provoking as they are, yet do not take account of the additional 10 to 20 per cent of the population who are more or less severely crippled or incapacitated by psychoneurosis. The entire magnitude of the problem was thrown into sharp focus by such findings as those of Selective Service in which well over one-third of all rejections before induction were on the basis of neuropsychiatric disorder. In spite of this tremendous need, the facilities for care are woefully inadequate. Thus, there are less than seven hundred part-time or full-time clinics in the country operated by communities, counties, states, or the federal government, a number which should be tripled merely to meet the current need. Half of the states have no community clinic of any type. The meeting of this staggering problem has been, is, and will continue to be a major concern of the mental hygiene movement.

GROUP PSYCHODYNAMICS

At the same time, as has been mentioned above, leaders in mental hygiene have of necessity been impressed by the profound implications at the international level of the same factors which operate in the individual, for the state, the nation, and the international scene are only increasingly complex groups of *individuals*.

Another item which has even more recently entered into the picture to give some hope of mental hygiene being of significance at an international level is the development of studies in group psychology and group psychodynamics whereby it has been discovered that there are definite psychologic principles which underlie the formation and functioning of groups just as there are in the case of individuals. This concept of group psychodynamics has constituted a particularly strong link with other fields of investigation in the social sciences generally, which have become increasingly concerned with the mechanisms of group-functioning.

In other words, various disciplines of scientific thought, all of them concerned with man himself in varying aspects, have gradually approached each other as each has widened its own boundaries. Psychiatry, from its original focusing on the insane, has come to be increasingly interested in the origins of attitudes in the individual, and more recently, in the group. Mental hygiene, springing from psychiatry, has become increasingly concerned with those factors which predispose to good or to poor mental health and adjustment. The social sciences, which have always been interested in the group, have found it necessary to try to evaluate those forces which make the group operate. It is a natural and logical sequence to progress from the solitary individual to that individual making his adjustment as part of a family, then integrating himself with a social group, thence functioning as part of a state or nation.

Up to this point, the road is relatively clear, although increasingly complicated as the number of constituents and the size of the total group increases. It would seem, however, that it might be that these same psychologic principles would function in the integration of states and nations into an international body; in other words, the principles of mental hygiene might be usefully applied to the problems which the world faces at the international level. Thinking along this line has been greatly stimulated by the formation of the United Nations, although the "unity" which is the objective of those who are

interested in mental hygiene at the international level is not political unity but a spiritual integration which alone can make political institutions of any sort function successfully.

INTERNATIONAL CONGRESS ON MENTAL HEALTH

It was with this general concept in mind that the International Congress on Mental Health was convened in London from August 11 to 21, 1948. Over two thousand persons, representing fifty-six different countries, attended. The Congress itself consisted of three international conferences: the International Conference on Child Psychology, the International Conference on Medical Psychotherapy, and the International Conference on Mental Hygiene. The plan of organization and functioning of the Congress was interesting and significant.

As the initial step, centers of mental hygiene, education, and sociology throughout the world were asked to encourage and supervise the formation of "preparatory commissions" prior to this meeting. These groups were to be: not limited in number, purely voluntary in composition, informal in organization, and composed of any individuals who were interested in this general problem. Since one of the prime aims was to bring together the thinking of various disciplines on this one subject, these commissions were made up of physicians, psychiatrists, psychologists, sociologists, anthropologists, political scientists, ministers, economists, educators, social workers, nurses, lawyers, and others—in short, all those whose interests touch on the matter of mankind and his adjustment to his fellows. Each commission chose its own topics for discussion and formulated its own thinking and recommendations. Some three hundred such groups in twenty-seven countries and including some five thousand participants met during the winter and spring of 1947 and 1948. The formulations of these groups were transmitted by Regional Headquarters to the International Preparatory Commission for the International Congress on Mental Health. This Commission met in England from July 24 to August 8 to digest and discuss this material and to prepare from it an agenda for the Congress itself.

The International Conference on Mental Hygiene had as its purpose the integration of the thinking in these various fields as working toward the elaboration of better principles and methods of mental hygiene—partly to coordinate what is currently known, and largely to indicate a path for future progress. One part of the deliberations was concerned with the furtherance of better mental hygiene in the individual countries themselves much as in any international conference in any field. The second part of the deliberations was concerned with the question of "mental health and world citizenship," which was the essential theme of the conference. Again it should be emphasized that this concept of "world citizenship" was not a political one. In the words of the statement by the International Preparatory Commission, "The idea of the 'world citizen,' as here conceived, is not used in a political sense. It is rather meant to convey the notion of a 'common humanity.' It does not raise the question of a world political sovereignty, replacing or embracing the sovereignties of existing nations. Such a new sovereignty may come, but it is not the concern of this statement. We are concerned with the attitudes and ideals of groups of men in relation to one another, and with the principles and practices of mental health in relation to a world community."

The deliberations of the Congress were of necessity general, and in themselves somewhat "preparatory." It is impossible to discuss these in detail because of their broad range. Certain fundamental principles and trends of thought, however, do deserve our consideration.

PROBLEMS OF MENTAL HYGIENE IN THE WORLD COMMUNITY

The difficulties of the entire undertaking were not underestimated. It was recognized that varying cultures pose many different types of problems, dating back not only for years but for generations and centuries. Thus the entire psychologic, philosophic, and ideologic structure varies fundamentally from culture to culture, so that common denominators are extremely hard to determine. There is even variance as to what would constitute good standards of mental health. For example, in our own western culture, the principle of the fundamental worth of the individual and existence of the state to serve "the greatest good of the greatest number" is almost axiomatic. In some other cultures, however, this is by no means the case, and there is age-old tradition that any approach to such an ideal is weak, unworthy, and dishonorable. It was well recognized that any one of these blocks might prove fatal to the entire enterprise.

On the other hand, it was emphasized that psychiatric, psychologic, and sociologic studies have demonstrated clearly that the attitudes and behavior of the individual and of the group are capable of a certain amount of plasticity. It is this plasticity which makes one person differ from another and which in large part determines the sort of person that he is. It is this same plasticity which determines the emotional and psychologic complexion of the group and which in itself accounts for the very divergences of attitude from group to group. Unfortunately, the environment and upbringing which mold the individual or the group into its final form are usually disorganized, fortuitous, and without either goal or method. It should be possible to establish sound principles of training and environment and to bring these to bear upon the individual so as to make him eventually capable of satisfactory

group relationships at all levels. This is obviously a tremendous task and one extending over a long period of time, but the fact that the human being does have plasticity and is and can be molded by his environment is the one single fact which gives us the greatest reason for hope.

THE TENSIONS PROJECT OF UNESCO

The need for continuing study of the mechanisms of human motivation is readily apparent. Thus the psychologic sources of aggression must be explored. This in turn must lead to consideration of the origins of fear, which is usually the basis for aggressive action. How these and other destructive drives arise and how they can be dealt with or prevented must be understood. Instances of friction between groups and between individuals must be analyzed as to the operating forces involved. Similarly, areas of harmonious group functioning must be studied to determine those factors which account for this desirable situation. The study now in progress of the sources of international tension, referred to as the "Tensions Project" of the United Nations Educational, Scientific and Cultural Organization is a good example of such scientific investigation. Observation of group psychology in experimental groups can shed much light on how a group develops and functions as something greater than the sum of its parts. Such experimental groups are already functioning and from them much has already been learned.

The necessity of interaction of various disciplines is shown in the need for utilization of the best experience of education, psychology, psychiatry, sociology, and other fields in solving the important question of how desirable psychologic attitudes and orientations can be fostered and how harmful ones can be avoided. This is the final task to which investigation is prerequisite but incidental.

The body of information which already exists along these and other related lines is both large and significant and is constantly and rapidly increasing. If the time has come, however, to refuse longer to accept the defeatist and dangerous concept that "human nature is like that" or that "there have always been wars" with the implied corollary that "there always will be," there must be even more scientifically determined fact to shed light on the nature of man and what can be done to keep him from annihilating himself.

For this scientific help from all these varying disciplines to be of significance, it is vital that it be incorporated into the social, educational, and political structure. It was strongly recommended that the findings and recommendations along all these lines should be made available to those functioning on political or other policy-making levels. Only in this way can the contributions of mental hygiene in its broadest aspects be of aid in the production of the spiritual "world citizenship."

WORLD FEDERATION OF MENTAL HEALTH

To continue and to stabilize the work of the International Congress on Mental Health, there was established the World Federation for Mental Health, set up by delegates from twenty-one nations having National Committees for Mental Hygiene or their equivalent. Dr. J. R. Rees of the United Kingdom is President of this organization, and included as a member of the Executive Board is Dr. George S. Stevenson, Medical Director of the National Committee for Mental Hygiene of the United States and President-Elect, American Psychiatric Association.

It is intended that one function of the World Federation for Mental Health shall be the furtherance of the mental hygiene program in various cultural and national groups throughout the world. Other fields of interest of the World Federation for Mental Health will be the application of the principles of mental health to the problems of industry, the coordination of the various disciplines of the social sciences and psychiatry, the extension of training for applying clinical findings to broad social issues, and the establishment of pilot studies and research in group psychology. It is planned that the World Federation for Mental Health will work in close cooperation with the World Health Organization and with the United Nations Educational, Social and Cultural Organization. A large and a vital part of the work of the World Federation for Mental Health will be to continue scientific study into the psychologic causes of war and the best ways in which they may be eliminated.

The entire program is obviously an ambitious one, and the difficulties to be encountered are many and great. These difficulties are not being minimized. It is recognized that the total body of our knowledge in psychiatric and sociologic fields is far from complete. It is also recognized that the gulfs between groups, states, cultures, and nations are wide and deep. Finally, it is realized that time for bringing about these desirable changes is not to be had merely for the asking. This is not a problem to be solved leisurely in the next century or two; it is one which is vital today. There is no easy assurance that the paths will be smooth or even passable. On the other hand, these factors are certain:

(a) The solution to the problems of society at any level lies not in the establishment of external aids to the good or barriers to the bad but within the nature of man himself.

(b) The psychologic, emotional, and ideologic status of man is plastic and capable of change.

(c) Some knowledge of the significant principles of emotional and ideologic organization is available and more can be gained.

On these bases there can be hope. Certainly no effort can be too great for the magnitude and importance of the task. That effort is under way.

An Educator Talks about Motivating People[1]

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BACK IN sixteenth century England the Bard of Avon, a philosopher of the first order, pondering over the problem of motivation which today gives us pause for thought, observed in the words of Portia: "If to do were as easy as to know what were good to do, chapels had been churches and poor men's cottages, princes' palaces."

But the poet with poetic "sixth sense," probably seeing the "wave of the future" in education with its projects and problems, bequeathed his passing observation to future pundits and pedagogues, while he proceeded with the portentous business at hand, namely, finding a husband for his heroine.

Even now, four hundred years later, educators are still wrestling with the problem of squaring knowledge and action, of activating people to use the information they possess, of influencing their students to "live up to" what they know, of closing the hiatus between behavior and belief. Motivation is at the very heart of the educational process—a process with which I feel certain all dietitians, even though you have never thought of yourselves as educators, are concerned in one way or another.

Do you want your patients, when they are outside hospital and clinic walls, to carry into their daily lives the dietetic patterns you have set for them? Or, are you content to plan their dietetic regime according to doctor's orders while under your supervision and let it go at that?

In your clinics and food classes, do you get your patients to live what they learn?

Do you lead the members of your mothers' groups in discovering their food problems and then guide them in solving them?

Do you endeavor to have your "contacts" translate this knowledge into reality in their homes and with their families?

If these things give you concern, if you seek changed behavior as a result of your work, then you are an educator as well as a dietitian, a nutritionist, or a home economist. Without this point of view, lacking this objective, you may be a consultant, a therapist, a diagnostician, or a "prescriptionist," or even, an informer—that is, a purveyor of health information. You may do things to or for people as do the physician and the health officer and the nurse. But only when you move people to do things for themselves, only when you guide them into purposeful self-activity, do you educate them. This technique of getting people to want to do things, of moving them to take action on their own problems, of influencing them to seek and to apply information is what the educator terms "motivation." It is the first step in the teaching process, and, as such, it is an essential with which every dietitian interested in influencing the food habits of her patients must be directly concerned.

"What help, then, can the professional educator offer?" you ask, as through the mist of years you look back to that example of formal education which you remember best—school, perhaps, where stars and rewards and special privileges baited reluctant scholars to the performance of uninteresting tasks that held little or no meaning for them. "Is this what you imply by the term educational motivation?" you may well inquire. Fortunately, it is not.

Modern educational psychology today has a dynamic point of view which emphasizes the growth and development of the individual's total personality. Modern educational philosophy stresses the functional value of the materials and methods of education. These point to the learner himself and his innate characteristics rather than to extrinsic rewards and devices for a solution of the problem of motivating those whose behavior we would change. And even more recently educators, especially those dealing with adult groups, have begun to avail themselves of the techniques of the social psychologists and the cultural anthropologists in the area of group dynamics. All these contributions to educational theory from the sciences allied to education have brought about new emphases in the educator's methods of motivating conduct and behavior whether the learners are school children or adults in community-organized committees and councils. Three of these newer emphases in educational method I should like to consider briefly, because they have a

[1] Presented at the 31st Annual Meeting of the American Dietetic Association in Boston, on October 22, 1948.

bearing on your techniques of getting people to want to change their behavior or improve their diets.

ACTION SPRINGS FROM PERSONAL INTERESTS

The first of these trends is the passing of the old order—the educator's sublime faith in knowledge *per se* as a motivating force in human behavior and the substitution of interest in the learner himself as the activator of behavior. Up to recent modern times, all educational endeavor has been predicated on the thesis that to know was to do. In keeping with this theory, organized subject matter was set out to be learned and then returned to the teacher in recitation or tests, all because some adult thought it was good for the learner. This was the traditional method of education. That students, letter-perfect in such artificial paper-and-pencil tests, let us say in nutrition, failed to meet the test of life-situations in the school cafeteria or at home, seemed to be of minor concern to educators of another day. But today's world-shaking events, and their consequent repercussions relative to the education of youth, have pried educators out of their lethargy and disturbed their satisfaction with the educational *status quo*. The demand for more functional education, for education which will make a difference and serve a purpose in the lives of those educated, has forced the modern educator to re-examine his beliefs with reference to the power of factual knowledge to affect the lives of those who have acquired it, and to question his methods of imparting such information. What has been the result?

As much as educators would like to believe that behavior is motivated by conscious rational processes, they have been forced to conclude that how we feel about an activity or a responsibility is much more important than what we know about it. All evidence points to the fact that most of our reasoning comes after we act, or fail to act; and then, in the form of rationalization, we set forth our pet excuses to justify our behavior.

Take, for example, the ideal of a periodic health examination as an essential in one's pattern of effective living. Have you had a complete health examination this past year? You have at your command all the scientific information and knowledge that should convince you of the soundness of this procedure. Yet, your scientific knowledge on this point didn't "motivate" you to take advantage of this basic step toward more healthful living. Can we expect more of those who are less highly trained?

Similar instances might be found in any field of learning. Witness the intelligent, informed citizens who do not vote or take part in community affairs. Note the discrepancy often existing between the Sunday teaching of various religious groups and the week-day ethics of some of their members. Recall for a moment any family you may know where socio-economic conditions are favorable and knowledge of food nutrients is not lacking, but where diets are far from adequate.

Since 1923 free immunization against diphtheria has been available in Massachusetts. Yet, in 1947, there were one hundred cases and twenty deaths from this dread disease. All were preventable, yet knowledge alone did not move mothers to avail themselves of the free preventive services.

Information alone, then, won't move people to act. Something more is needed. Or perhaps the necessary knowledge should be acquired in a different way. Could it be that the learner himself should do his own seeking and questing for knowledge because he needs it or because it has significance for his purposes, rather than having something alien to his interests foisted upon him?

Modern educators think so. Influenced by organismic psychology and mental hygiene movement, educators today are saying that all behavior is purposive, that action springs out of personal wants and interests, and that the urge to satisfy those wants, these physical and social needs, is the strongest motivating force for learning. Today learning is considered as the interaction of a person with his environment for the purpose of achieving a goal and, in the patter of the pedagogue, the learner is defined as "a goal-seeking organism." That sounds dry as dust, doesn't it? But let's bring in the learner. Here is teen-age Barbara, blonde and beauteous but a bit too buxom. Can you show her how to solve her problem and take her out of the wall-flower line? And Alvin, just turned eighteen, "dead set" on getting into Annapolis, but he's pounds underweight. Can you guide him in achieving his objective? And Mrs. Tarbox, a young matron, who slipped into careless dietetic ways and needs to embark on a "success course" to regain her charm. Can you indicate the steps to her goal?

A purpose or a problem is, from the educational point of view, the most definite and dynamic of motives. With this in mind, you can tie in your plans, projects, instructions, or proposed activity with the learners' purposes and problems. You are assured of success in your undertaking because you have tapped the self-interests of those with whom you deal. And there are many of these interests closely related to more adequate nutrition, better balanced diets, and special dietetic procedures. Some of these are problems of personal appearance, of personality development, of acceptability in the group, of popularity, of getting along with people, of having adequate energy for work and play, of achieving success in sports, in work, in social life—even problems of getting a husband and holding him! All of these goals and objectives call for information in your field and give direction and purpose to what might otherwise be the pursuit of classified scientific facts and generalizations to be forgotten presently because they were learned without conscious need

and apart from the individual's plans, purposes, and interests.

First, then, find the personal goal or want. Make the information, training, or experience a step toward the attainment of that goal, and you have nature on your side.

EMOTIONAL ASPECTS OF LEARNING

The second trend in the modern educator's theory of motivation is the increased emphasis on the emotional aspects of learning, a natural concomitant of a broadened philosophy of education which is concerned with all aspects of the learner's growth, not merely with his intellectual nature. Modern educators are being taught that men act on their emotions, that they won't act until they are emotionally aroused, that emotions are the driving forces of human behavior, and that the way a person feels about a situation determines what he will do about it. To quote a well-known educational psychologist: "Intellect is a mere speck on a sea of feeling." This is a pretty disturbing dictum to those who prefer to think that cold logical reason motivates our decisions.

As a result of this changed viewpoint with regard to the emotions, the building up of attitudes has assumed an importance in present day education comparable to that accorded the acquisition of subject matter at an earlier period. In the parlance of the educator, attitudes determine the individual's readiness to act; they indicate the course of his behavior; and he who would change behavior, must first change underlying attitudes, dispositions, or feelings.

TODAY'S EDUCATIONAL METHOD

So much for the educator's present-day credo regarding the dynamics of feelings and emotions. In actual practice have educators gone emotional? The emotional appeal in the past has been to fear, envy, competition, and other corrosive emotions. Today's health educator, for instance, teaches health facts and ideas and probably much more subject matter in the area of health science than was ever taught in the old health education. But health concepts are accompanied by strong feelings of faith, belief in their efficacy, and enthusiasm. And, they are taught for a purpose—the student's purpose. Today's educator knows that information alone won't change attitudes but that favorable experiences will—and dramatic experiences, experiences tinged with deep, genuine feeling.

The modern health educator knows that if he wants to be successful in impressing his group, let us say, with the desirability of cleaner eating establishments in the community, he must first get his students to feel deeply about conditions in such establishments as they now exist. If he wants them to come to a decision about the need for more adequate health services in their town, he must first put the students in the situation where they desperately need some of the missing facilities and where, because of this lack, the outcome may be frustrating to their plans and goals. If he is emphasizing better breakfasts for the high school crowd or the purchase of more adequate lunches, he must first build up an emotionally toned picture of the approved situation with resultant improvement in complexion or personality values.

To make our students feel deeply, to give them vivid experiences, we are utilizing role-playing and the socio-drama of the group psychologists. With pupils too young to enter into the creative roles on their own, plays, dramatic stories, story pictures, and anecdotes which will give them experiences vicariously are used. And to move students emotionally, we are utilizing the prestige values inherent in their idols of screen, stage, radio, Braves Field, and the Harvard Stadium as well as the Bowls to the South and West. The advertisers have not cornered the market when it comes to "Superman" and "The Breakfast of Champions." And we are trying to select teachers and instructors for their warm, vibrant, enthusiastic personalities, as well as for their knowledge of organic chemistry, nutrition, and public health because we believe that attitudes and enthusiasms are caught as well as taught.

Secondly, then, to move your groups, tap the unused sources of the emotions—the driving forces of human behavior.

MOTIVATION THROUGH GROUP PLANNING

The third and last trend in educational motivation is the wider use of group planning with subsequent group decision and individual commitment to common group goals. The individual is motivated through the democratic process of abiding by the will of the majority. Your own literature of nutrition research offers you some of the best examples of this technique, and in my own field of health education, group planning and decision are the accepted procedures in motivating communities to act on problems which should give concern to their members.

What is the magic in having committees decide the problems they will work on and commit themselves to certain tasks? The value of group planning for motivation is based on the theory that in order to interest a person in an activity you must involve him in it. Let him help plan it; let him become active in carrying it out; let him be personally responsible for its success. The more persons you thus involve in an undertaking, the more will work for its success because it is no longer your activity, it is theirs. To the individual it becomes "my" plan, "my" campaign, "my" menu, "my" program, and nothing comes closer to personal interest and achievement. The individual identifies his interests with the group interest.

Let us see how this works in adult health education activities. Today the community health educator experienced in the techniques of community organization would not go into a community and deliver a lecture or talk on the need for cancer clinics or early diagnosic facilities for diabetes or heart disease, or community action against the threats of venereal disease and expect action. That may be this community's problem as she sees it; but the community isn't yet aware of its problem, and until it does identify it as its own problem, effort to eradicate the problem is wasted. Definite steps must be taken so that the community itself will identify its own problems. Usually lay committees are organized, and under their aegis study groups are formed. Through visitation and surveys of local resources, problems are uncovered. In studying them, the help of experts (once unwelcome) is now willingly sought.

Group discussion is the method of study employed. Discussion should lead to group decision. Once this has been achieved, every individual member is committed to being personally responsible for this decision. This personal involvement motivates the "committed" individuals to carry out the will of the group. This procedure attains the objective sought because of the force of group opinion and desire for group status. It is democracy in action, and democracy can work!

Lastly then, if you would motivate a group to action, you must be the catalytic agent which speeds up group discussion, group decision, group commitment, and group action, but like all good catalysts you don't enter into the reaction. You stand by. For, if properly motivated, action will come from the group!

Fresh Cabbage Juice for Peptic Ulcers

Thirteen hospitalized ulcer patients were put on a diet which eliminated all fresh and uncooked foods, but which included daily at least 1 liter of cabbage juice, which contains vitamin U. The patients were served only foods which had been heated, since heating destroys the anti-peptic ulcer factor, tentatively named vitamin U. Thus possible sources of vitamin U, except for the cabbage juice, were eliminated from the diet.

The cabbage juice was served in mid-morning, at lunch, in mid-afternoon, at supper, and early in the evening. In order to make it acceptable, it could be seasoned and also eaten with crackers and other foods. It could be mixed with tomato juice which had been heated. In addition, three patients received a combination of 75 per cent cabbage juice and 25 per cent celery juice, the stalks and greens of which also contain vitamin U.

The amount of cabbage juice each patient received was determined by relative body weight. Calculations were based on studies with guinea pigs which have shown that 2 gm. of cabbage leaves or 4 cc. of juice protect against histamin-induced peptic ulcers in animals weighing approximately 300 gm.

Twice daily fresh cabbage juice was prepared by pressing from cabbage heads. Only green cabbage was used, and there was no selection of the heads. They came from the regular hospital supply, and all of the cabbage head was used. About 1000 cc. of juice was obtained from 2 kg. cabbage.

Results were based on "crater-healing time," as determined by gastroscopic and radiologic examination. The healing time was the time between the original visualization of a crater by x-ray and the subsequent non-visualization after treatment.

The average healing time for all thirteen patients was 9 days; for eleven, the craters disappeared in 6 to 9 days, and the longest time was 23 days.

For the patients with duodenal ulcer in this study, the average healing time was 10.4 days. This may be compared with reports in the literature for sixty-two patients who received the usual treatment consisting of hospitalization, bland diet, frequent feedings of milk, alkalization, antispasmodics, regular sedation, and limited use of tobacco. For such patients, the reported average healing time has been 37 days, with a range of 13 to 68 days.

Gastric ulcer patients in the present study showed healing in an average of 9.3 days, compared to 42 days as reported in the literature for six patients.—*Abstracted from "Rapid Healing of Peptic Ulcers in Patients Receiving Fresh Cabbage Juice" by Garnett Cheney, M.D., Department of Medicine, Stanford University School of Medicine, San Francisco. California Medicine 70: 10 (January), 1949.*

Development of the Present Treatment of Diabetes[1]

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I AM deeply appreciative of the honor to address you, first, because you are dietitians and as never before I believe diet important in diabetes and you teach it to doctors and diabetics; second, because you forced me to reread *Total Dietary Regulation in the Treatment of Diabetes* (1), that little known and rare treatise of Allen, Stillman, and Fitz, published as a monograph in 1919 by the Rockefeller Institute for Medical Research. Upon this, all subsequent writers on diabetes have freely drawn if they were as fortunate as I to possess it.

From it, we learn that John Rollo had the courage of his convictions. He believed the source of sugar in the urine could be cut off by restricting the diet to animal food, and in 1796 he experimented with Captain Meredith. Fortunately for Rollo, he allowed a little bread and milk early in the morning and late at night and thus unwittingly avoided an abrupt change to a protein-fat regime. In between these early and late lunches were three meals—five feedings in all—a breakfast of blood pudding made of blood and suet and a dinner and supper of game or old meat with fat or rancid old meat and pork. With it he counselled, "Eat in moderation." How modern this sounds! It was only yesterday that Houssay reported that his toads, previously made susceptible to diabetes by injections of alloxan, would develop it if they ate all their food in one meal, but would escape it if the same quantity were divided between three meals. Rollo's avoidance of overnutrition, perhaps due to his rancid meat, was a wonderful adjuvant to treatment, but it took more than a hundred years for his low-carbohydrate, high-protein, high-fat diet and his counsel to undereat, to receive general acceptance and recognition. Rollo was not modern in this respect. He did not resort to psychotherapy. He took a shorter course to achieve his end. The food he prescribed was so revolting that it is said that two of his patients, a man and a woman, gave up eating for five days because they contracted so great a loathing for food. As a result of his fast, the man was supposed to have been cured.

DIABETES BEFORE 1800

Nearly eighteen hundred years contributed to the background of Rollo's difficult decision and perilous experiment. The first sixteen centuries were barren in dietetic endeavors, although Paracelsus at about the time Columbus discovered America grasped the fact that the urine of a diabetic when boiled to dryness yielded a heavy residue which he termed a salt. Then in the seventeenth century, Thomas Willis, who was born the year after the pilgrims landed at Plymouth, made a great advance. He added the sweet taste to the symptoms of polyuria, polydipsia, and emaciation which were recognized by Celsus and Aretaeus in the early Christian era. Thomas Willis found the "urine wonderfully sweet, as if imbued with honey or sugar." Indeed, that method of diagnosis of the disease persisted for over two hundred years; in fact, my senior visiting physician at the Massachusetts General Hospital, later Dean of the Harvard University Medical School, Dr. William L. Richardson, recorded in his own handwriting as house pupil that the urine of the patient tasted sweet. Trommer's test for sugar in the urine appeared in 1841 and Fehling's quantitative test in 1850. Rollo also undoubtedly knew of Willis' discovery, but he must have been greatly helped by Matthew Dobson who, in 1775, writing in English instead of Latin, demonstrated that the sweet taste of a diabetic's urine was really due to sugar; Chevreul later proved it to be identical with glucose and, indeed, that the serum of the blood tasted sweet, too. This led Cullen (1709–1790) to add mellitus to the name of the disease.

Rollo's diet was discarded because the patients rebelled, because it failed to protect severe cases of the disease, and because of the frequently occurring bad results from changing suddenly from a mixed diet to a protein-fat regime. As house officer at the Massachusetts General Hospital in 1894 and 1895, I repeatedly saw diabetic patients enter in a tolerable state and with the change in diet caused by the

[1] Presented at the 31st Annual Meeting of the American Dietetic Association in Boston, on October 20, 1948.

sudden elimination of carbohydrate and an increase in protein and fat come to an untimely end in diabetic coma.

BOUCHARDAT'S OBSERVATIONS

Bouchardat, who was born in 1806 and lived eighty years, not only had the advantage of Rollo's methods, but from Bernard he learned that sugar could be formed from protein, and that, normally, glycogen (animal starch) was present in the liver. Also, he at least knew of a method for determining sugar in the blood which I doubt if he often used. I know that even in 1891 it baffled me and my classmate, later Professor Frank Meara of Columbia, in Russell H. Chittenden's laboratory. Bouchardat also was aware that the puncture of the fourth ventricle of the brain led to glycosuria, but perhaps he was helped as much as anything by Lavoisier's discovery that the human body burned with oxygen although without a flame. Animal life and heat are dependent on oxidation.

The clinical experiences and observations of Bouchardat deserve your especial attention. He resurrected the Rollo treatment. Allen says of him, "Bouchardat in the clinical field ranks with Claude Bernard in the experimental field. He is easily the most brilliant clinician in the history of diabetes." He (Bouchardat) individualized the patient, substituted fat and alcohol for rancid fat, forbade milk because of its carbohydrate content, urged patients to eat as little as possible, inaugurated occasional fast days to control the glycosuria, introduced green vegetables, recognizing their low content in sugar and protein but abundance in salts, and even suggested boiling the vegetables and throwing away the water to reduce the percentage of carbohydrate. Gluten bread and bread substitutes began with Bouchardat. Another progressive step was his intelligent use of exercise. Allen quotes him as saying, "You shall earn your bread by the sweat of your brow." He (Bouchardat) advocated daily urine tests. He prescribed small doses of bicarbonate of soda. One of his tenets was "You have no organic disease. There is really a functional weakness of certain parts of your apparatus of nutrition. Restore physiological harmony and you will attain perfect health." From this summary given by Allen, it is plain to see the important advance in treatment which began with Bouchardat.

During the middle of the nineteenth century definite additions were made by various doctors. Griesinger realized that 60 per cent of protein could be excreted as sugar, and he did experiments to prove this. Pavy discredited the apparent benefit from opium and pointed out its transitory nature. Seegen said that every prolonged glycosuria should be considered as incipient diabetes. Epstein warned against the danger of coma from the sudden inauguration of an anti-diabetic diet.

LEARNING ABOUT ACIDOSIS

Acidosis was a term introduced by Naunyn (2) for the acid intoxication accompanying diabetic coma. The story of acidosis is fascinating. Rollo observed a diabetic patient, age twenty-two, with the odor of decaying apples on his breath. Petters in 1857 found acetone in the urine of a diabetic patient. Pavy observed the difficulty of rendering a diabetic patient's urine alkaline with sodium bicarbonate. Gerhardt described the ferric chloride test for diacetic acid, and his son, Decius Gerhardt, and Hallervorden recognized the high percentage of ammonia which explained how it came about that the acid elements in the urine during coma exceeded the bases, thus preparing the way for the discovery of β-oxybutyric acid by Stadelman and Minkowski. The first detailed description of the symptoms of coma was made by Kussmaul in 1874. Magnus-Levy's summary (3) of six cases of diabetic coma treated in the Naunyn Clinic was a masterpiece. The use of sodium bicarbonate for coma became universal, but I gave it up in 1917, concentrating instead on the treatment of the disease *per se* and the use of salt solution to combat dehydration. Sodium bicarbonate still claims a few advocates and the value of potassium is undoubted in those patients, unlike our own, who receive glucose (4).

NAUNYN'S CONTRIBUTIONS

For me, Naunyn's book and Naunyn's personality formed my own background of treatment from my entrance into practice in 1897 up to the introduction of fasting and undernutrition by Allen in 1914 (5). Naunyn humanized treatment. He sifted the wheat from the chaff in the reports of earlier clinicians and based his recommendations on more scientific background. How could he have done otherwise, surrounded by such a brilliant coterie of assistants for whom he was the guiding hand? It was in his clinic that von Mering and Minkowski startled the medical world by extirpating the pancreas and producing diabetes (6).

But the credit belongs to Naunyn to have seen clearly the merit in Rollo's work and the addition to it of Prout's advice that the quantity of the food was more important than the quality. Naunyn had principles of action and reasons in each case. He urged the separation of the treatment of the diabetic patient—that is, the treatment of the diabetes as a disease, which ought to be cured or at least improved, and the nursing care of diabetic patients which was quite a different matter. I quote him: "Although the course of the disease in no way is exclusively dependent upon the glycosuria, yet this is the first symptom because its severity in general is the most reliable measure by which the severity of the disease can be measured and because in and for itself it brings manifold dangers." He observed that glycosuria shows in many cases of diabetes an out-

spoken tendency to progressiveness. But he added, "In the majority of cases, however, the progressiveness of glycosuria is only the expression of the bad influences which the glycosuria itself exerts on the tolerance." Again, "Each marked glycosuria in a diabetic ought to be constantly avoided, since sooner or later it is pregnant with fate. The glycosuria ought to be overcome on account of the favorable influence which freedom from glycosuria has upon the tolerance. Unconditionally this should be attempted at the beginning of treatment, because in each case, not until this is accomplished, can one learn how much it may be possible to attain." And especially the following sentence has appealed to me, "In my experience, I consider it very probable that among the early strictly treated cases which in the beginning give the impression of being severe, but later on run a favorable course, there are many a one which for this can thank their early strict treatment and, on the other hand, there is no doubt that the finally severely coursing cases in the great majority are those which were subjected late, if ever, to energetic care."

He deplored the thought that the essential task of the doctor was to preserve the patient for a long time in an endurable condition. He felt that treatment has a broader, more definite purpose, namely, to strengthen and improve the disturbed function or at least to hold it from further failure.

Cantani, the Italian, like Naunyn, advocated strict treatment, but he carried it so far that the patients were put under lock and key. When the urine became sugar free, he kept it so for weeks, even months, before raising the diet. Yet Cantani had no idea that later two investigators, Dohan and Lukens (7), in Philadelphia would show that if the blood sugar of a healthy cat was kept high for two weeks, diabetes would appear.

Naunyn's idea of the unity of diabetes helped enormously in the treatment, because it showed the necessity, which some of his predecessors had likewise felt, that even the mildest glycosuria should be overcome. One of Naunyn's arguments for the unity of diabetes was his recognition and belief in the universality of heredity which, like a red thread, was interwoven in all types of the disease.

Naunyn restricted the carbohydrate in the diet, but he allowed up to 125 gm. of protein and fat in abundance, but always with the idea that first the patient be kept sugar free. In a few cases he was unable to do this, and the patient was nursed along with a moderately low carbohydrate ration.

In the last century a multitude of carbohydrate cures were recommended—the milk diet, the rice cure, the potato diet, the oatmeal cure. Little by little the explanation of even the ephemeral advantages obtained by these diets was solved by the demonstration that in all of them undernutrition was a factor, sometimes made possible by fasting or by vegetable days introduced before or after the cure.

Von Noorden with his large clientêle and his excellent contributions to the literature did much to spread the knowledge of diabetes, and though his oatmeal cure (8) was later discredited, the arguments pro and con for the use of carbohydrate in diabetes greatly stimulated research. Eventually he agreed with Naunyn on the unity of diabetes.

ALLEN'S CONCEPT OF UNDERNUTRITION

To Allen more than to anyone else the next advance in diabetes can be credited because of his utilization of fasting for prolonged periods which he followed with the total dietary regulation of the patient. Earlier writers had employed fasting for a day or so, and Guelpa had combined fasting with Hunyadi Jano's water. Allen demonstrated that, with fasting, patients could be made sugar free and it was his opinion that by reducing the patient's weight the pancreas could better provide for the lessened body mass. He was kind enough to say that one of his reasons for recommending fasting was a conversation we had in which I told him of a patient who developed tuberculosis and became emaciated nearly to a skeleton, and, although his diabetes formerly had been the severest of the severe, it then became relatively mild. I remember his telling me that he thought he knew the reason why. Hodgson at Waukesha, Wisconsin, had emphasized the need of undernutrition, perhaps more than anyone else at the period, but Allen accentuated it and proved that it worked and, unlike Hodgson, successfully applied it to severe cases.

The introduction of treatment by undernutrition in my practice increased the duration of life of my patients by 25 per cent and, though it was painful to see the cases, it is a fact that those patients who were starved lived to benefit by insulin. When I received a reproachful letter the other day from a patient who was on a fasting regime during that preinsulin era, I looked up the record and found that of the 149 children treated before her without fasting, all but six had died. Treatment then in my own group was based largely on the hope that something new would be discovered and that any method was justified which would keep a patient alive to allow him to benefit by it. Even today the same principle holds. Allen, like Naunyn and others before him, realized that to tolerate a mild glycosuria was bad, because later it would change to a severe glycosuria. Allen has always advocated a sugar-free urine and a normal blood sugar in order to combat downward progress, which he insists with religious fervor is not spontaneous.

DISCOVERY OF INSULIN

In 1921 the long awaited and even predicted hormone, insulin, was discovered by Banting and Best (9) in Toronto and a new era in diabetes appeared.

No one not treating patients before that date can have any conception of the change in the diabetic patient. In the prophet Ezekiel, one reads of the "valley of dry bones," and no better conception of the change which took place has ever been written. Instead of starvation, one could give food. Instead of 64 per cent of our patients dying in coma, which Allen's undernutrition had lowered to 40 per cent, diabetic coma in our group has now dropped to less than 2 per cent. Pregnancy in a diabetic was unknown by Bouchardat, but is now so common that among our patients more than 450 cases have been confined in the last eleven years, under the supervision of Dr. Priscilla White in association with Dr. Raymond S. Titus. Surgery, which was dangerous to the diabetic patient, is now welcomed.

My first case to be treated with insulin was a nurse who developed diabetes in 1917 and was given insulin by me on August 7, 1922. Her weight had dropped from 155 lb. to 69 lb. and for nine months she had been unable to climb more than a single flight of stairs; yet with insulin she regained her original strength, her weight rose to 135 lb., and only in 1947 did she suddenly expire. She died, it is true, from arteriosclerosis after thirty years of diabetes.

Children and severe cases were given regular insulin four times in the 24 hr. Thanks to Hagedorn (10) in Copenhagen and later to Scott and Fisher in Toronto, protamine zinc insulin was discovered which would last for upwards of 48 hr. and today there is in the making a new insulin which, like globin insulin, combines the quick-acting qualities of regular or crystalline insulin with the prolonged action of protamine insulin, although for a longer period. We look forward to this. Undoubtedly, it will make treatment more agreeable, because one injection a day will replace several. But I confess that I anticipate within the next few years radical discoveries in the realm of the treatment of diabetes which not only will protect the remaining good islands of Langerhans in the pancreas, which secrete insulin, but also will have a prophylactic effect and be of value in averting the disease in relatives of diabetic patients.

Arteriosclerosis occurring prematurely is today the diabetic's menace. It is true that today 67 per cent of my patients succumb to it instead of 17 per cent prior to 1914. But why? For two reasons: first, because the patients are living three times as long and, therefore, are exposed to hardening of the arteries for thrice the length of time; second, because the average age at death has risen from forty-four to sixty-four years. But arteriosclerosis is not a necessary corollary to diabetes. Only recently I sent a congratulatory telegram to a patient telling him that after twenty-five years of the diabetes there were no signs of arteriosclerosis in his body as proved by an ophthalmologist, a clinician, and a roentgenologist. He was the fourth recipient of the Victory Medal awarded by the Trustees of The Diabetic Fund of the Boston Safe Deposit and Trust Company. This medal is available to any diabetic in the world who passes the tests. The life histories of these patients eventually will show the type of treatment which they followed and thus be a guide for others.

My recent survey of the development of the treatment of diabetes through the centuries and a review of my own patients convince me more than ever that the precepts of Naunyn and Allen in rigorously controlling the disease are sound.

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Taste Blindness and Diabetes in Identical Twins

Segall describes the identical genetic constitution of a set of identical twin girls of Jewish parentage. The children both became diabetic between the ages of three and four, had similar bizarre neurologic lesions, mental deficiency, and pes cavus. Additionally, both were taste blind for phenylthiocarbamide (PTC). Non-diabetic brothers of the twins were tasters for PTC. Study of the twins emphasizes a previously suggested relationship between PTC taste blindness and diabetes. Both conditions have been assumed to be inherited as recessive mendelian characters. Terry and Segall, in a previous study of 680 diabetic and non-diabetic persons, demonstrated a 15.3 per cent greater taste blindness among the diabetic group, indicating an apparently significant statistical difference. A true association was believed to exist even though testing for taste blindness lacks much procedural exactness.—*From Current Comment, J.A.M.A. 139: 102 (January 8), 1949.*

Relation of Menstrual Losses to Iron Requirement[1]

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IN DETERMINING the requirement for iron the importance of the menstrual loss may not be adequately appreciated. Widdowson and McCance (1) and other workers have shown that there is normally no excretion of iron through the intestinal wall, and that the daily losses in urine, in intestinal secretions, and in sloughed-off cells are small. Consequently, the major loss of iron is that due to loss of blood. This loss in the average healthy woman is usually confined to the menstrual period; therefore, iron lost during this period largely determines the iron requirement.

REVIEW OF LITERATURE

Since the iron lost during menstruation is so important, a search of the literature was made to see whether enough cases had been studied to give some idea of the losses of women in general. This search revealed 184 cases in which iron losses had been determined for a total of 276 menstrual periods. Most of these cases were included in two extensive studies: one, by Barer and Fowler (2), on 100 hospital staff members and the other, by Arens (3), on 51 students in a private school. The rest of the cases were incidental to studies of other phases of iron metabolism. These 184 cases were deemed sufficient to furnish some idea of the iron losses of women in general, and the cases were, therefore, compiled and studied.

The quantity of iron lost during menstruation was found to vary widely from individual to individual. The range of loss per person per period was from 2.28 to 78.96 mg.[2] Of these subjects 154 or almost four-fifths lost between 4.15 and 32.5 mg. per period. Those women with very large or very small losses had no idea that their losses were unusual. Apparently the individual has no standard upon which to base an estimate of the amount of iron which she needs to replace because of these losses.

One of the difficulties involved in the use of menstrual losses as a guide to requirement is the variability of the iron loss from period to period for a given individual. A typical case is that of one individual who lost 43.09, 22.12, and 39.62 mg. for three successive periods. Only thirty-four cases were found where the iron content of the menses was determined for two or more periods. The coefficient of variation was calculated for each of these cases. The importance of having as large a number of determinations per individual as possible is illustrated in Table 1. One half of the cases were from determinations of the iron content of the menses from two periods only; among those, in three cases there was a variation of less than 10 per cent from the mean, while the remaining fourteen cases had variations ranging up to 50.6 per cent from the mean. Of the eight cases where the iron losses from three menstrual periods were determined, half had coefficients of variation below 10. When the menses from four periods per individual were analyzed, coefficients of less than 10 were found for two of the three individuals. The six

TABLE 1

The relation of the coefficient of variation of the menstrual iron in relation to the number of periods

COEFFICIENT OF VARIATION	NUMBER OF PERIODS							
	2	3	4	6	8	11	12	13
	Number of individuals							
1– 5	2	2	1	1				1
6–10	1	2	1	1	1	1	1	
11–15	3	2						
16–20	2	1	1					
21–25	1							
26–30	6							
31–35	1	1						
Above 35	1							

[1] Received for publication November 22, 1948.

[2] Fowler and Barer (2) report one case with a loss for one period of 110.5 mg. This determination is not included in this tabulation, because only the analyses for the first periods studied by them are reported here. This case is however, included in Table 1.

TABLE 2

Iron losses during menstruation and approximate daily retentions required for 184 normal women

INVESTIGATORS	NUMBER OF SUBJECTS	IRON LOSSES	IRON RETENTION REQUIRED TO MEET LOSSES*
		mg./per period	*mg./per day*
Gillett, Wheeler, and Yates (9)	1	34	1.21
	1	38	1.36
	1	42	1.50
Ohlson and Daum (10)	1	25.26†	0.90
	1	25.68	0.92
	1	41.92	1.50
Barer and Fowler (2)	13	below 5.8	below 0.21
	23	5.8–11.4	0.21–0.40
	25	11.4–17.0	0.41–0.60
	10	17.0–22.6	0.61–0.80
	8	22.6–28.2	0.81–1.00
	7	28.2–33.8	1.01–1.20
	2	33.8–39.4	1.21–1.40
	3	39.4–44.9	1.41–1.60
	9	above 44.9	above 1.60
Leverton and Roberts (11)	1	11.13†	0.40
	1	13.80†	0.49
	1	14.26†	0.51
	1	22.84†	0.81
Widdowson and McCance (1)	1	18.8†	0.67
Moore, Minnich, and Welch (12)	8	4.56–11.4¶	0.16–0.40¶
	6	11.4 –19.66¶	0.41–0.70¶
Leverton (7)	1	8.87†	0.32
	1	8.97†	0.32
	1	13.80†	0.49
	1	33.53†	1.20
Widdowson and McCance (5)	1	3.6†	0.11§
	1	9.8†	0.33
	1	11.0†	0.36§
	1	28.0†	1.00§
Arens (3)	0	below 5.8	below 0.21
	5	5.8–11.4	0.21–0.40
	11	11.4–17.0	0.41–0.60
	14	17.0–22.6	0.61–0.80
	7	22.6–28.2	0.81–1.00
	7	28.2–33.8	1.01–1.20
	0	33.8–39.4	1.21–1.40
	2	39.4–44.9	1.41–1.60
	5	above 44.9	above 1.60

* Calculated on the basis of a menstrual cycle of twenty-eight days. Where there is a plus sign, the value was given by the author.

† Mean of two or more periods.

¶ Calculated from the highest value given for circulating hemoglobin and the volume of blood loss.

§ Value given by the author.

individuals, for whom the iron losses of more than four menstrual periods were determined, all had coefficients of variation below 10.

This examination of the variability leads to the conclusion that when only two successive menses are analyzed, the resulting average is unreliable as a guide to true losses of iron over any considerable length of time. Unfortunately, the number of cases in which more than two successive periods were analyzed was too small for the drawing of definite conclusions. Certainly three periods are necessary, and probably more.

In order to find the effect of the menstrual losses of iron on the requirement, the amount of iron which must be retained each day of the year to replace the losses must be determined. Before this can be done, the length of the menstrual cycle must be known. The length varies widely from individual to individual, and for the same individual at different times. Arey (4) has compiled a number of the studies on this subject reported in the literature and has concluded that the commonest length for over 8000 cycles of 585 persons, considered as a unit, is 28 days, while the average length is 28.4 days for women over nineteen years of age. Therefore, in calculating the values for the required daily retentions found in Table 2 and Figure 1, a twenty-eight-day cycle was assumed when the required retention was not reported on a daily basis by the author. For this calculation, values for the average losses of iron for all 185 subjects were used regardless of the number of menstrual periods available for computing the average.

The large number of women whose estimated requirement was from 0.08 to 1.21 mg. iron daily is shown graphically in Figure 1. One hundred fifty-nine women, or 86 per cent, fell within that area; 115, or 62 per cent, required less than 0.71 mg.

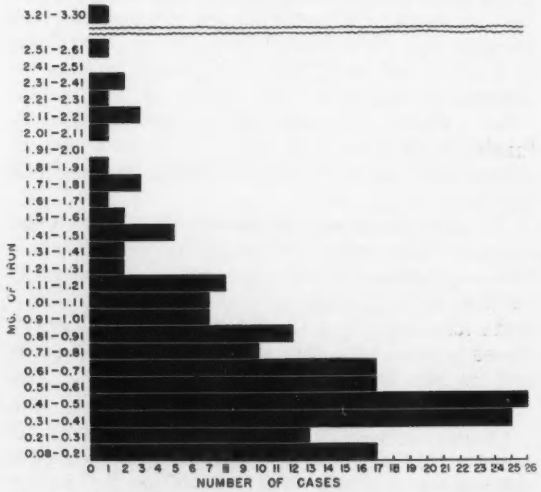

FIG. 1. *Daily iron retention required to replace menstrual losses.*

daily. The single area including the most cases was that from 0.31 to 0.51 mg. per day, but actually only fifty-one cases, or 28 per cent, were included in that area. Since 1.2 mg. covers the needs of most women, a daily intake from which this amount could be absorbed would be as high as should be set for practical purposes as a requirement for women in general. The twenty-five women out of the 184 whose losses extended up to 2.60 mg. per day cannot be ignored. The needs of such women may have to be met by the use of medication. On the other hand, 1.2 mg. is more than many women need. Which women need to retain that large an amount is difficult to ascertain because the individual woman has no standard upon which to base an estimate, consequently the safest procedure is to supply every woman with enough iron to cover the needs of the women whose losses are as large as 1.2 mg. per day. Another point in favor of requiring a retention as large as 1.2 mg. is that menstrual losses, although far outrunning any others are not the only losses. Urinary losses of iron are usually less than 0.1 mg. per day; losses in bile are small and probably a small percentage is reabsorbed; losses in hair and sloughed-off mucous membrane and skin cells are very small; and losses in perspiration are unknown though likely very small, also. Thus there are losses in addition to those due to the menses, which, though small, must be included in estimating the requirement.

RETENTION OF DIETARY IRON

The problem now arises of determining how much iron should be included in the diet to obtain a retention of 1.2 mg., since the amount absorbed by the normal adult is small. A tentative answer to this question may be deduced from several studies of this problem. Widdowson and McCance (5) found an average absorption of 12.5 per cent for four women who ate a diet deriving 40 to 50 per cent of its calories from white flour and the remainder of the calories from a mixed diet. Johnston, Frenchman, and Boroughs (6) reported a mean retention of 11 per cent for five young women on a normal mixed diet containing 7 mg. of iron. From these studies, a retention of about 11 to 12.5 per cent will be assumed provisionally for normal women on a normal mixed diet, although more evidence is needed. Retentions higher and lower than these are no doubt common because many factors, both physiologic and dietary, affect absorption.

One important factor affecting the percentage of absorption is the composition of the total diet. The presence of excess phytic acid has been shown to decrease the absorption by the formation of insoluble iron phytate. On the other hand reducing substances, which change the ferric iron to the more absorbable ferrous form, increase the iron absorption. Both Leverton (7) and Johnston, Frenchman, and Boroughs (6) found increased absorption of iron when large amounts of beef were included in the diet. Thus not only the iron content, but the diet as a whole must be considered when preparing a diet for maximum iron replacement value.

With an absorption of 11 to 12.5 per cent, an intake of 10 to 11 mg. per day would be enough to replace the losses of iron of almost nine-tenths of the women whose menstrual iron losses have been reported in the literature. This amount of iron would be inadequate for the few women with high losses unless they absorb more than 11 to 12.5 per cent of the iron in the diet. This may be the case, as some evidence (8) points to the probability that when iron stores are depleted, the absorption of iron increases. On the other hand, many women require less than 10 to 11 mg. per day to replace iron losses because their losses are less than 1.2 mg., but the fact that absorption is sometimes less than 11 to 12.5 per cent must also be taken into account.

PLANNING A DIET TO MEET IRON NEEDS

Providing a normal mixed diet containing 10 to 11 mg. iron per day is not as easy as it might at first appear. One might assume that a diet containing one egg, a small serving of meat, one serving of vegetables besides potatoes, and two servings of fruit, daily, would provide a satisfactory amount of iron. Yet a diet of this type may contain no more than 8 mg. of iron daily. Unless a conscious effort is made to include iron-rich foods, such as molasses, spinach, liver, oysters, dried apricots, and prunes, or more than one moderate serving of meat and one egg,

TABLE 3

One day's menu containing 10.4 mg. of iron

FOOD	SERVING WEIGHT	IRON
	gm.	*mg.*
Grapefruit sections	100	0.30
Grape-Nuts Flakes	15	0.65
Enriched bread	25	0.45
Coffee		0.0
Cheese soufflé	110	1.50
Sliced tomato	50	0.30
Sliced cucumber	10	0.03
Gingerbread	50	1.47
Whipped cream	30	0.01
Milk	250	0.08
Enriched bread	25	0.45
Pork roast (cooked)	60	2.00
Mashed potatoes	100	0.60
Buttered spinach	50	1.50
Celery	20	0.10
Fruit cup	100	0.43
Milk	250	0.08
Enriched bread	25	0.45
Total		10.40

the chances are that the iron content will not amount to 10 or 11 mg. The value of enriched bread for adding to the daily intake should be noted. If three slices of unenriched bread are replaced by the same amount of enriched bread, the iron intake will be increased by about 1 mg.[3]

In Table 3 is a menu containing 10.4 mg. of iron. To provide that level of iron, it was necessary to include spinach, which is a high-iron vegetable, and gingerbread, which is made with molasses. With such menus as this, in which two high-iron foods are included in addition to a moderate serving of meat and egg in the soufflé, the iron requirement of most of the women whose menstrual losses have been discussed will be met.

In the past, 10 to 11 mg. of iron may have been easier to obtain than it is today due to sources other than foods. In many modern households where tin pans, which are really iron sheets coated with tin, and iron skillets and kettles have been replaced with heat-resistant glass and aluminum utensils, where foods preserved in tin cans have been partly replaced by frozen foods and where ordinary steel knives have been replaced by stainless steel ones, little iron is added to foods during their preparation.

SUMMARY

In summary, a review of the literature containing information on menstrual iron losses of normal women has been made. Assuming a twenty-eight-day menstrual cycle, the daily iron retention required to replace this loss has been calculated. The estimated needs of almost 86 per cent of these women were found to be met when 1.2 mg. of iron was retained daily. Even though many women could be adequately nourished with a smaller retention, a lesser amount cannot be recommended for general use because of the difficulty of knowing which women need less iron. To obtain a retention of 1.2 mg., a diet containing much more iron is required. If an absorption of 11 to 12.5 per cent of the iron in a mixed diet is assumed tentatively, then a daily intake of 10 to 11 mg. of iron is sufficient.

[3] These values were calculated from analyses made in our laboratory, on bread from a single lot of enriched and a single lot of unenriched flour from the same mill.

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Training Program for Subsidiary Workers

The Food Administration Section of the American Dietetic Association is giving special consideration to the urgent need for subsidiary workers in the dietary department. According to Marion Floyd, Chairman of this Section, we have two distinct problems:

(a) "The better selection and training of employees.

(b) "The development of a group of food service supervisors, a corps of first line supervisors, to do many of the routine duties now performed by dietitians (professional personnel).

"For the first problem, we have *A Guide to the Selection and Training of Food Service Employees*, a recent A.D.A. publication which sets the pattern for all to follow. The widespread adoption and use of this manual will benefit all.

"In our second problem, it seems we must first determine the job description of the supervisor or assisting person. In other words, we must decide what duties she can be assigned. Then will follow the development of a plan of training for this person or group of persons."

The Chairman would like to have a nation-wide picture of our present practices, needs, and the thinking of our membership. Consult the president of your state dietetic association regarding the contribution which you and your state can make in filling this great need. Your state president has received a sample questionnaire which you can fill out quickly and easily.

Influence of Various Levels of Thiamine Intake on Physiologic Response[1]

V. Maximum Work Output

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POTTER (1) and others have pointed out the role which thiamine plays in the food-energy-enzyme cycle. Since thiamine has been shown to be important in the transformation of foodstuffs into energy, it seems reasonable to expect that a low-thiamine intake will be reflected in maximum work output. Experimental evidence has been presented by numerous investigators, among them Johnson *et al.* (2), Barborka *et al.* (3) and Williams *et al.* (4) which shows that when man is placed on a diet deficient in thiamine, his work output decreases. Shock and Sebrell (5) found that by perfusing frog muscle with a buffered glucose-Ringer's solution to which thiamine had been added, the total work output of the muscle was significantly increased. Kniazuk and Molitor (6) showed that the work output of rats was significantly less when the rats ate a diet deficient in thiamine.

This investigation is an attempt to show the unmasked effect of low-thiamine intake on the maximum work output of healthy women.

EXPERIMENT 1

The construction of the diet eaten during this experiment has been discussed elsewhere (7, 8).

Measurement of Maximum Work Output

The main problem to be considered in studying the effect of various amounts of thiamine on maximum work output was the selection of an amount of work that would differentiate between small changes in work capacity. Since our experience taught us that the levels of thiamine in the diets designed for the experiment might not produce deficiencies to the point of the classical clinical manifestations, the exhaustive type of exercise used by other investigators seemed to be inadequate as a measure of relatively small changes in maximum work output. Obviously, if the intake of thiamine is low enough to produce such symptoms as easy fatigue, muscle and joint soreness, poor appetite, and general debility, any gross measure of work would suffice. The nature of this experiment demanded an exercise which provided sharp end points so that the exact amount of work done could be calculated. The bicycle ergometer served the purpose well (9).

The work performed consisted of having the subjects ride the bicycle at maximum effort for 1 min. and was recorded in volts as shown in Figure 1. One min. was selected since experience showed that by extending the work period, some subjects experienced reactions of exhaustion, such as nausea and vomiting, dizziness, and soreness of muscles. It was necessary to avoid these symptoms, not only because the subjects resented it, but also because the exercise had to be repeated at regular intervals. A limited work period is more conducive to greater initial effort on the part of the subject because of the absence of psychologic reactions to the effects of exhaustive exercise. It was proved in this laboratory that nothing was gained by extending the work, since the maximum work output for 1 min. correlated 0.94 with the maximum work output for 2 min.

The amount of work done in the 1-min. period was found by laying off twelve 5-second intervals

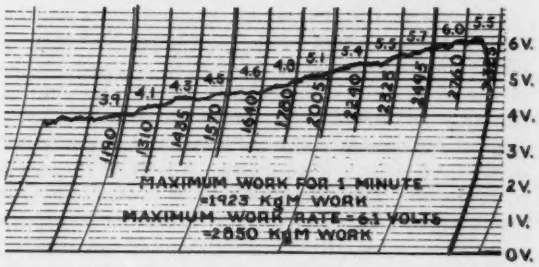

FIG. 1. *Record of maximum work output for 1 min. recorded in volts.*

[1] This work was generously supported by a research grant from General Mills, Inc., Minneapolis. Received for publication August 10, 1948.

on the record as shown in Figure 1. The mean voltage for each 5-second interval was found and written on the record. With the use of a calibration table (9), the work equivalent to the voltage reading was recorded for each 5-second interval. The average maximum work output for the twelve 5-second intervals is the work performed in 1 min.

Results

Experiment 1 was devoted to the construction of the low-thiamine diet, getting subjects accustomed to eating a prescribed diet, and establishing technique for measuring maximum work output.

EXPERIMENT 2

Method

This experiment was designed to discover the effects of a low-thiamine diet on maximum work output. The subjects and the composition of their diets have been described in detail previously (7, 8). Briefly, twelve subjects were divided into two groups of six each. During a control period of forty-five days, all subjects ate an adequate diet. During an experimental period of forty-five days which followed the control period, one group of six subjects (the control group) ate the basal diet described (7, 8) which supplied approximately 140 mcg. thiamine and received in addition supplements of 1200 mcg. thiamine daily. The other six subjects (experimental group) ate the basal diet and received placebos, making their total daily thiamine intake approximately 140 mcg.

Maximum work output was measured as described in Experiment 1. Data were collected twice each week during both the control and experimental periods. The first two records taken were charged off as practice and discarded; thus the norms established during the control period were based on ten consecutive records. During the experimental period, twelve records were made, the last four of which were used to establish the average maximum work output for this period. The last four records were used since it is reasonable to assume that any effects produced by the low-thiamine diet would be more pronounced toward the end of the experiment.

Results

The scores for maximum work output for the control group during both the control and experimental periods are shown in Table 1. A comparison of the means for each subject during the control period, with those for the experimental period shows that all subjects except No. *9* improved significantly in their maximum work output. Subject *9* tended to improve. This improvement is a characteristic result of work experiments and is due to an actual increase in work output.

The scores for maximum work output for the experimental group during both the control and experimental periods are shown in Table 2. Three subjects improved significantly, and three tended to improve. This also demonstrates the characteristic increase in work output in spite of the fact that the subjects were eating a low-thiamine diet.

TABLE 1

Maximum work output for 1 min. on the bicycle ergometer by six control subjects during Experiment 2 in which they ate not more than 1340 mcg. thiamine daily

RECORD NUMBER	WORK OUTPUT					
	Subject 7	Subject 8	Subject 9	Subject 10	Subject 11	Subject 12
Control period—1200 mcg. thiamine daily						
	kg.m.	*kg.m.*	*kg.m.*	*kg.m.*	*kg.m.*	*kg.m.*
3	1597	1731	1526	1793	1834	2051
4	1589	1713	1560	1804	1793	2068
5	1565	1708	1657	1816	1684	1899
6	1398	—	—	1836	1678	2005
7	1629	1693	1658	1713	1772	1952
8	1550	—	1487	1866	1543	2088
9	1643	1709	1673	1995	1675	2073
10	1688	1480	1564	1965	1905	2132
11	1680	1730	1648	1948	1746	1974
12	1643	1596	1695	2036	1745	2047
Mean	1598	1670	1608	1877	1738	2029
Standard deviation	79.6	82.3	69.8	98.4	94.8	67.0
Experimental period—not more than 1340 mcg. thiamine daily						
21	1783	1773	1707	2182	1933	2138
22	1703	1796	1743	2046	1823	2149
23	1736	1727	1605	2175	2007	2194
24	1803	1720	1705	2195	1884	2142
Mean	1756	1754	1690	2150	1912	2156
Standard deviation	39.2	31.7	51.4	60.2	67.4	22.4
Statistical data						
t	3.48	1.81	1.58	4.79	3.10	3.44
Significance level	1%	10%	20%	0.1%	1%	1%

Because the low-thiamine diet produced no change, it was decided to carry out a similar experiment over a relatively long period of time to determine if the element of time was important in the manifestation of thiamine deficiency with respect to maximum work output. As a means to this end, Experiment 3 was designed.

EXPERIMENT 3

Method

The procedure adopted was to study the effect of three levels of thiamine intake on maximum work output. The levels were arbitrarily set at 200, 625,

TABLE 2

Maximum work output for 1 min. on the bicycle ergometer by six experimental subjects during Experiment 2 in which they ate not more than 140 mcg. thiamine daily

RECORD NUMBER	WORK OUTPUT					
	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5	Subject 6
Control period—1200 mcg. thiamine daily						
	kg.m.	*kg.m.*	*kg.m.*	*kg m.*	*kg.m.*	*kg.m.*
3	1616	1804	1653	1707	1907	1796
4	1592	1756	1540	1729	1799	1772
5	1621	1906	1635	1812	1873	1777
6	1640	—	1669	1821	1949	1715
7	1647	1610	1603	1928	1810	1646
8	1684	1661	1800	1988	1796	1800
9	1660	1574	1711	1859	1765	1681
10	1659	1945	1576	1831	1936	1779
11	1662	1759	1691	1859	1766	1730
12	1754	2031	1721	2078	1990	1950
Mean	1654	1783	1660	1861	1859	1765
Standard deviation	42.0	146.5	72.1	106.8	78.2	78.6
Experimental period—not more than 140 mcg. thiamine daily						
21	1922	1895	2083	1968	1960	1949
22	1945	1686	2039	2054	1989	1924
23	1798	1871	2100	1904	1894	1858
24	1895	1872	2027	1855	1818	1944
Mean	1890	1831	2062	1945	1915	1919
Standard deviation	56.8	84.3	30.2	74.5	65.9	36.3
Statistical data						
t	7.89	0.79	9.97	1.33	1.17	3.48
Significance level	0.1%	50%	0.1%	30%	30%	1%

and 1000 mcg. per day. A discussion of the preparation, content, and management of these diets has appeared elsewhere (7, 8).

This experiment involved nine of the subjects used in Experiment 2. The experiment was planned so that each level of thiamine involved three subjects. The 200-mcg. thiamine diet was designated as the basal level. The other levels were attained by supplementing them with 425 and 800 mcg. thiamine respectively. The subjects were rotated so that those who had received adequate thiamine in Experiment 2 were placed on the lowest level (200 mcg.) in Experiment 3 and vice versa. The intermediate group was heterogeneous with respect to previous thiamine intake.

The experiment covered a period of nineteen consecutive weeks. Two records of maximum work output were made for each subject each week, making a total of thirty-eight records.

TABLE 3

Maximum work output on the bicycle ergometer for three subjects during Experiment 3 in which they ate not more than 200 mcg. thiamine per day

RECORD NUMBER	WORK OUTPUT		
	Subject 7	Subject 8	Subject 9
Control period—1200 mcg. thiamine daily			
	kg.m.	*kg.m.*	*kg.m.*
17	1905	1650	1812
18	1980	1710	2030
19	1840	1704	1935
20	1874	1699	2060
21	1773	1717	1933
22	1796	1743	1823
23	1727	1604	2007
24	1720	1705	1884
Mean	1827	1690	1936
Standard deviation	84.5	39.7	88.1
Experimental period—not more than 200 mcg. thiamine daily			
32	1735	(25)* 1425	1762
33	1620	(26) 1535	1761
34	1679	(27) 1355	1842
35	—	(28) 1468	1926
36	1796	(29) 1441	1836
37	—	(30) 1434	1615
38	1743	(31) 1509	1832
Mean	1715	1452	1796
Standard deviation	60.1	54.7	90.3
Statistical data			
t	2.36	9.63	2.95
Significance level	5%	0.1%	2%

* Earlier records were used in case of Subject 8 since she became thiamine deficient and was removed from the diet.

For purposes of comparison, the records made during the last month of Experiment 3 were used to establish the experimental means, and the records made during the month preceding Experiment 3 served as a basis for establishing the pre-experimental status of each individual. This procedure of comparison was adopted because all subjects showed an increase in the absolute maximum work output during the previous experiment, and because this increase varied as to time of development and amount of change with each subject.

Results

The 200-Mcg. Level of Thiamine Intake. The data collected from the subjects eating not more than 200 mcg. thiamine per day are shown in Table 3. The maximum work output of all three subjects decreased significantly.

The 625-Mcg. Level of Thiamine Intake. In Table 4 are presented the data collected from the subjects

TABLE 4

Maximum work output on the bicycle ergometer for three subjects during Experiment 3 when they ate not more than 625 mcg. thiamine per day

RECORD NUMBER	WORK OUTPUT		
	Subject 5	Subject 6	Subject 12
Control period—1200 mcg. thiamine daily			
	kg.m.	*kg.m.*	*kg.m.*
17	1940	1860	2097
18	2064	2017	2163
19	1983	1961	2232
20	1987	2064	2186
21	1960	1949	2138
22	1989	1924	2149
23	1894	1858	2194
24	1818	1944	2142
Mean	1954	1947	2163
Standard deviation	71.3	66.0	38.5
Experimental period—not more than 625 mcg. thiamine daily			
32	1902	1832	2023
33	1858	1879	1994
34	1942	1928	2185
35	1946	2022	—
36	—	1898	2104
37	1899	1926	1956
38	1914	1940	2055
Mean	1913	1918	2053
Standard deviation	33.4	54.5	75.1
Statistical data			
t	1.23	0.85	3.25
Significance level	30%	50%	1%

TABLE 5

Maximum work output on the bicycle ergometer for three subjects during Experiment 3 in which they ate approximately 1000 mcg. thiamine per day

RECORD NUMBER	WORK OUTPUT		
	Subject 1	Subject 2	Subject 3
Control period—1200 mcg. thiamine daily			
	kg.m.	*kg.m.*	*kg.m.*
17	1842	1848	2015
18	1809	1892	2047
19	1936	2053	1997
20	1912	1975	2031
21	1922	1895	2083
22	1945	1686	2039
23	1796	1871	2100
24	1895	1872	2027
Mean	1882	1887	2042
Standard deviation	52.3	98.6	32.0
Experimental period—not more than 1000 mcg. thiamine daily			
32	1809	1939	2078
33	1839	1886	2075
34	1855	1873	2073
35	1809	2066	2042
36	1897	1879	2047
37	1853	1807	2018
38	1851	1806	2070
Mean	1845	1895	2058
Standard deviation	28.1	82.5	20.6
Statistical data			
t	1.49	0.18	1.05
Significance level	20%	90%	40%

eating approximately 625 mcg. thiamine per day. At this level, all subjects showed a tendency toward a decrease in maximum work output, although only one showed a significant difference. It is of interest to note that the subject who experienced a significant decrease had been eating an adequate thiamine diet during the previous experiment. This suggests that Subjects *5* and *6* had become somewhat adjusted to a lower-than-average thiamine intake.

The 1000-Mcg. Level of Thiamine Intake. The data collected from this group are shown in Table 5. There was no significant change in maximum work output for any of the subjects.

The average daily amount of thiamine eaten and the average daily amount excreted in the urine by each subject at each level investigated for both Experiments 2 and 3 are shown elsewhere (10).

DISCUSSION

It has been shown by Karpovich and Pestrecov (11) that when normal people ride a bicycle ergometer, their maximum work output gradually increases for a long period of time. No attempt was made in any of the experiments reported here to carry the subjects to the point in time where the maximum work output became consistent from day to day. The plan was to compare maximum work output for different periods and under different conditions, by using the subject's status at any given time and under any given dietary condition.

The principle of improvement due to repetition is shown in Tables 1 and 2, in which the data show that all subjects improved. Under these circumstances, if there was any decrease in work output due to the lack of thiamine it was submerged. However, in Experiment 3 which lasted nineteen weeks, all three subjects eating not more than 200 mcg. thiamine daily showed a true decrease in maximum work output (Table 3). In this instance any tendency toward improvement due to practice either was submerged or canceled because of a lack of thiamine.

Further, at the 625-mcg. level of thiamine intake,

it is shown by the data that the subjects tended to decrease in maximum work output which casts doubt on any statement that this amount of thiamine is sufficient to maintain them at their maximum level of work output.

At the 1000-mcg. level of thiamine intake the subjects showed no significant difference in maximum work output. This appears to be evidence that they were eating adequate thiamine and that they had reached a plateau in maximum work output.

SUMMARY AND CONCLUSIONS

Data are presented to show the effect of five levels of thiamine intake on the maximum work output of healthy women. The following are the conclusions:

(a) Subjects eating a diet which furnished 2500 calories and 140 mcg. thiamine per day showed no detrimental effects with respect to maximum work output at the end of forty-five days.

(b) The subjects whose diet contained 200 mcg. thiamine per day suffered a significant decrease in maximum work output at the end of nineteen weeks. Obviously, the element of time is an important factor in the manifestation of thiamine deficiency when maximum work output is used as an index.

(c) From the data presented, it would appear that there are individual differences in the tolerance to low-thiamine diets.

(d) The data suggest that 625 mcg. thiamine is not enough for the maintenance of maximum work output status.

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Cholesterol Content of Canned Fish

As the dietetic importance of canned fish is increasing steadily, my associates and I investigated the total cholesterol content of canned fish by the method of Sperry and Branch and Sobel and Meyer, and found the following values. Values are expressed on the basis of dry substances.

FISH	CHOLESTEROL
	%
Yellowfin tuna	0.149
Bluefin tuna	0.172
Albacore	0.144
Skipjack	0.180
Pacific mackerel	0.24
Horse mackerel	0.27
Sardines	0.19

In comparison with the values for round beef (0.4 per cent), veal shank (0.5 per cent), calf liver (1.42 per cent), whole egg (1.8 per cent) the cholesterol content of canned fish seemed to be particularly low.—*E. Geiger, M.D., Terminal Island, California, in Queries and Minor Notes, J.A.M.A. 139: 194 (January 15), 1949.*

Effect of Cooking on the Folic Acid Content of Eggs[1]

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FOLIC acid has been shown to be of great importance in human health, especially in relation to anemia of various types as clearly reviewed by Jukes in 1947 (1). Little work is, as yet, available, however, regarding the normal human requirement for folic acid under different physiologic conditions. Information is needed also regarding food sources of this vitamin produced under known conditions. The lability of this vitamin and its presence in various forms in foods makes it of interest to determine the balance between liberation and destruction or binding during cooking or to determine the distribution in foods as they are eaten.

Eggs are known as very good sources of vitamin A, riboflavin, protein, phosphorus, and iron. They also make a contribution of thiamine, especially when the average per capita consumption of 380 eggs per year is considered. Few analyses of the folic acid content of eggs have been reported. In only one paper were values for cooked eggs reported; one sample baked showed loss of 65 per cent and one sample of scrambled eggs a loss of 31 per cent from the original value of 110 mcg. per 100 gm. (2).

In view of the recent improvements in the assay method, specifically, the use of conjugase liberation of bound forms of folic acid (3), the modification of the medium and the availability of a crystalline standard, it was of interest to determine the value of cooked eggs as a dietary source of folic acid.

EXPERIMENTAL PROCEDURE

Assay Method

The method of assay used was the microbiological one of Mitchell and Snell (5), as modified by Luckey *et al.* (4). The criterion of potency was the measurement in an Evelyn photoelectric colorimeter of the turbidity induced by the growth of *S. faecalis R* on media containing extracts of the egg samples or crystalline folic acid.[3] Liberation of bound forms of folic acid was accomplished by the use of folic acid conjugase, an enzyme found in extract of hog kidney (3, 6). From two to four separate assays were made from samples held in frozen storage. Samples were protected from bright light during analysis.

Sampling

In all cases, an aliquot from a mixture of forty-eight eggs was used for each sample. For scrambled eggs, aliquots for assay of the raw egg and the two samples to be cooked were taken from the same mix. For poached and fried eggs, forty-eight eggs each were used for raw and for cooked samples. The eggs were produced by hens fed the same ration, eliminating the dietary influence from the possible variables affecting the concentration of folic acid.

Cooking Methods

All conditions for the preparation of the eggs were as carefully controlled as possible. For the scrambled eggs, 200 gm. raw egg mix were heated in an iron skillet with 1 gm. corn oil on low heat for 7 min., being stirred at a uniform rate with a stainless steel spatula.

Two eggs at a time were fried in a small skillet with 1 gm. corn oil on low heat for 5 min.; three eggs at a time were poached in a skillet for 5 min. in two cups of water maintained at 90°C. All samples of the forty-eight eggs, whether raw or cooked, were combined with equal weights of 0.1 N sulphuric acid. In all cases, changes in weight in cooking and cooling were recorded, and all values were calculated to a raw egg equivalent.

It was also the intent of this study to compare folic acid retention in eggs cooked in the dark with those cooked in ordinary kitchen lighting (30 footcandles intensity) to see whether this factor might affect the high cooking losses. To do this, equal aliquots from the raw egg mixture or an additional forty-eight eggs from the same lot were taken for cooking under both conditions of lighting mentioned above.

[1] Supported by a grant from Poultry and Egg National Board. Published with the permission of the Associate Director of the Wisconsin Agricultural Experiment Station. Received for publication November 19, 1948.

[2] Now at the University of Kentucky.

[3] Folvite, furnished by Lederle Laboratories.

TABLE 1

Loss of folic acid in eggs during cooking

SERIES NUMBER	FOLIC ACID IN RAW EGG MIXTURE	EFFORTS OF COOKING							
		Scrambled eggs			Fried eggs			Poached eggs	
		Cooked in darkness	Cooked in ordinary room light	Average loss	Cooked in darkness	Cooked in ordinary room light	Average loss	Cooked in ordinary room light	Average loss
	mcg./100 gm.	*mcg./100 gm.*	*mcg./100 gm.*	%	*mcg./100 gm.*	*mcg./100 gm.*	%	*mcg./100 gm.*	%
1	27	24	20	18					
2	13	11	10	19					
3	18	8	14	39					
4	21	11	11	48					
5	17				12	15	21		
6	15							10	33
7	18							11	39

RESULTS AND DISCUSSION

The folic acid content of egg products was found to be very low even when conjugase liberation of bound forms was employed in the determination. The data on whole eggs are presented in Table 1.

The average potency of the raw eggs was 18 mcg. per 100 gm. with a range of 13 to 27 mcg. for the various mixes. In a recent report by Schweigert *et al.* (7), evidence was presented that the dietary intake of pteroylglutamic acid (folic acid) influenced the concentration in the egg. Unfortunately, in the present study no analyses were made of the ration fed the hens. However, from the composition of the ration used and the potencies reported by Lillie and Briggs (8), computation gives the value of approximately 2 mg. per kilogram of ration.[4] This value may be compared to the supplemented ration (2 mg. added to a basal containing 0.42 mg.) used by Schweigert *et al.* (7) who reported for eggs 13.3 mcg. per 100 gm. whole egg. Their analyses were based on takadiastase rather than conjugase treatment to release bound forms of folic acid.

In cooking losses, the values presented in the table ranged from 18 to 48 per cent of that present in the raw egg. There was no indication that one method of preparation was preferable from that standpoint. Thus, even with the short heating time of 5 or 7 min. at a low temperature, the lability of folic acid is evident.

No significant difference in the loss of folic acid during cooking occurred between the samples which were cooked in the dark and those cooked in ordinary room lighting. Heating, thus, appeared to be the major factor in the loss of folic acid during cooking.

A few analyses were made on foods made from egg white, such as meringues and angel food cakes. While not reported in detail, the results indicated two general conclusions. Raw egg whites contain one-third to one-half as much folic acid per gram as do whole eggs. Losses of the order of 60 or 70 per cent were obtained for meringues and angel food cakes, as compared to an average loss of 30 per cent in the cooking of whole eggs. This might indicate the presence of folic acid in a more labile form in the egg white.

Thus, with the ration fed the hens, the folic acid potency of whole eggs was reduced one-fifth to one-half by cooking for a short time at low temperatures, such as those used for scrambling, poaching, or frying eggs. The contribution, then, of a cooked egg once a day is 5 to 7 mcg. as determined by the conjugase-microbiologic method.

CONCLUSION

Although eggs are excellent sources of vitamin A, riboflavin, phosphorus, and iron and a fair source of thiamine, the folic acid content of cooked eggs as measured by microbiologic assay was very low due to initial low potency and to cooking losses of 20 to

[4] Composition of ration fed to chickens:

INGREDIENTS	WEIGHT	FOLIC ACID AS REPORTED IN LITERATURE (8)	
		Amount	Computed potency
	gm.	*mcg./gm.*	*mcg./100 gm.*
Ground yellow corn	30	0.3	9.0
Ground wheat	30	0.4	12.0
Ground oats	15	0.2	3.0
Alfalfa leaf meal	5	6.0	30.0
Meat scraps	4	1.6 (tankage)	6.4
Soybean oil meal	20	7.7	154.0
Granite grit	1.5		214.4 (or about 2 mg./kg.)
Limestone grit	1.5		
Bone meal	2.0		
Salt	0.5		
Fish oil 85D	0.5		
Fish solubles (25 % solids)	5.0		
Riboflavin	1 mg./lb.		

50 per cent. A cooked egg may be expected to contribute 5 to 7 mcg. folic acid.

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Cup-Feeding of Newborn Infants

Artificial feeding of newborn babies by cup or glass, rather than by bottle, appears to have advantages, according to the results of a ten-year study at the University of Kansas School of Medicine.

In using the cup or glass, the child is held in the mother's or nurse's arm as for breast-feeding. The infant's mouth makes movements with the lower jaw which regulate the flow of milk, and automatically prevents choking in this way. However, care must be taken to prevent excess spilling. The baby's hands should be held to prevent its knocking the glass or cup aside. When sufficient nourishment has been taken, the baby will push the glass away.

The advantages cited are several. Less time is required—only from 5 to 10 min. It is also suggested that such a technique may prevent hunger strikes by the baby and frustration of the mother at the time of weaning, and that the introduction of solid food at three or four months appears to be easier. The cup-fed babies have gained weight as rapidly as breast- and bottle-fed infants. It is noted that this technique is particularly well suited for premature infants and those with hairlip and cleft palate, since they may have minimal sucking capacity. It is also thought that the cup-feeding had advantages with infants who are suffering from upper respiratory diseases.

It is also pointed out that cup-fed babies have physical contact with the mother, similar to that of the breast-fed child, since a cup or glass can't be propped up on a pillow in the crib beside the baby, as is often done with bottle-fed babies.—*Abstracted from "Cup Feeding of New Born Infants" by Robert C. Fredeen, M.D., Department of Pediatrics, University of Kansas School of Medicine. Pediatrics 2: 544 (November), 1948.*

Emotional Response of Infants to Cup-Feeding

Is sucking by an infant due to libidinal drive as psychoanalytic theory says, or is it a learned reflex? In an attempt to shed some light on this topic, a study was made at the University of Kansas School of Medicine and the Child Welfare Research Station, State University of Iowa, Iowa City, to compare breast-feeding, bottle-feeding, and cup-feeding. Three groups of twenty infants were used to compare responses to these three types of feeding.

It was felt that if sucking is an instinctual drive, cup-fed babies would show more emotional disturbances and more non-nutritional, pleasure sucking, such as thumb sucking, since they would have less opportunity to satisfy the drive. To test sucking activity, an adult's rubber-covered finger was placed in the infant's mouth, and the sucking response was timed. To be indicative, sucking had to begin within 5 seconds. The breast-fed babies developed a stronger sucking reflex than the other two groups, which did not differ from each other.

Observations on spontaneous oral activity, crying, general body activity, and appetites were also made. There was little difference between the groups, except that the breast-fed babies showed a slightly poorer appetite during the first three days and slightly higher general body activity from the fourth to ninth days.

If the psychoanalytic theory is true, the cup-fed babies should show more signs of frustration and more seeking of stimulation. In this investigation, that did not happen. Although there was little difference between the groups, if anything the breast-fed babies showed such reactions. Also, the bottle-fed babies were similar to the cup-fed, not to the breast-fed as might be expected from the "instinct" theory.—*Abstracted from "Effects of Cup, Bottle, and Breast Feeding in Oral Activities of Newborn Infants" by Herbert V. Davis et al. Pediatrics 2: 549 (November), 1948.*

Comparison of Some Nutrients and Yield of Four Varieties of Turnip Greens[1]

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CONSIDERABLE research has been done on the adaptability of varieties of fruits and vegetables to limited areas so that high yielding varieties can be grown which have good market appeal and which can be transported well. Variety is commonly mentioned as an important factor influencing nutritive value, yet there are few data to support such statements. Little attention has been given to comparing the content of each of several nutrients in the sample of each of the varieties grown under the same conditions. This report concerning turnip greens deals with both of these phases of inquiry. Although popular and important in the diet of Texans, turnip greens have not been studied previously in this way.

EXPERIMENTAL PROCEDURE

Four varieties of turnip greens—Seven Top, Shogoin, Purple Top White Globe, and Golden Ball—were grown at College Station, Texas, as a fall crop in 1941, 1942, and 1943 on Lufkin fine sandy loam. There were four single-row replications of each variety, made in adjoining fertilized and unfertilized soil. The fertilizer used was a mixture of ammonium sulphate, treble superphosphate, and muriate of potash in such proportions as to supply respectively per acre 60 lb. of nitrogen, phosphorus pentoxide, and potassium oxide.

When the greens had reached a good marketable stage, all plants in a 10-ft. section of each row were harvested and weighed in the field to provide a record of yield. The shortest possible harvesting period was used (one to five days) to provide samples of comparable development. When harvested, enough of the root crown was taken to hold the leaves together. In the laboratory, the leaves with stems attached were broken off by hand about 1 to 1½ in. above the crown, all leaves suitable for cooking being retained. The same person performed this task with all samples, thus minimizing variation due to the personal factor in handling. The leaves were handled individually while being washed in several pans of tap water until free from sand, after which they were rinsed twice in distilled water. They were then spread out in a single layer on cheese cloth supported on a rack made for the purpose. Water on the surface of the leaves was removed by gently patting with cheese cloth, aided by draft from an electric fan.

The weight of washed leaves, when dry but not wilted, was used as "fresh weight," since the leaves in this state more nearly approximated uniform turgidity than at any other point in handling them. The leaves were then allowed to wilt and were dried at 100°C in an electric oven with forced draft. They were ground in a porcelain ball mill and sifted through a 30-mesh silk bolting cloth.

Chemical analyses were made to determine water content of the fresh greens, and calcium, phosphorus, and iron in the dried samples in all three years. Protein was also determined in the last two years. Moisture, protein, calcium, and phosphorus were determined by the methods of the Association of Official Agricultural Chemists (1). The iron was determined by a modification of the o-phenanthroline method of Saywell and Cunningham (2). In the modified procedure, nitric acid as well as sulphuric and perchloric acids were used in the wet ashing, according to the method of Jackson (3), and an Evelyn photoelectric colorimeter was used for measuring color concentrations.

RESULTS AND DISCUSSION

Yield and Acceptability

The record of yield and of proportion of leaves acceptable for cooking in the samples prepared for analysis is given in Table 1. The most consistent feature in the relative yields of the four varieties was the low position of Golden Ball. Despite certain irregularities, however, the four varieties may be

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ranked for yield in descending order as follows: Purple Top, Shogoin, Seven Top, Golden Ball. Except for Golden Ball, varietal differences in yield were not great enough to be an important factor in choosing variety to grow in this locality or in similar environment. If a root as well as leaves is desired, either Purple Top or Shogoin would qualify, but only Shogoin would be suitable if a smooth leaf is wanted. Seven Top would meet the preference for a turnip to be used for greens with little or no root.

Differences between fertilized and unfertilized yields were divided equally in favor of each of these two treatments. In 1941, the crop of fertilized plantings developed more rapidly than the unfertilized. The unfertilized greens when harvested three weeks later were comparable in size to the fertilized at harvesting three weeks earlier. In 1942 and 1943, the rate of development of the fertilized and unfertilized plantings was similar. In two of the three years, Shogoin made the greatest response to fertilizer.

TABLE 1

Yield and percentage of leaves acceptable for cooking in four varieties of turnip greens

TREATMENT AND DATE OF HARVEST	VARIETY	YIELD		AVERAGE PROPORTION OF ACCEPTABLE LEAVES†
		Weight in field	Rank*	
1941				
		gm./ft.		%
Fertilized; harvested November 4, 5	Seven Top	70.9	4	77.0
	Shogoin	128.5	2	75.1
	Purple Top	129.5	1	74.2
	Golden Ball	81.3	3	73.3
Unfertilized; harvested November 24	Seven Top	205.9	1	74.0
	Shogoin	112.4	3	70.2
	Purple Top	137.9	2	74.5
	Golden Ball	112.4	3	74.1
1942‡				
Fertilized; harvested November 11, 12	Seven Top	241.0	3	56.9
	Shogoin	406.4	1	61.6
	Purple Top	258.0¶	2	57.6
1943				
Fertilized; harvested November 8, 11, 12	Seven Top	173.6	3	62.7
	Shogoin	194.9	1	58.4
	Purple Top	183.6	2	62.0
	Golden Ball	85.8	4	52.3
Unfertilized; harvested November 8, 10, 11	Seven Top	135.4	2	61.6
	Shogoin	104.2	3	66.3
	Purple Top	154.5	1	59.1
	Golden Ball	87.9	4	54.9

* Highest yield is considered rank No. 1.

† 100 per cent = total weight of sample harvested for analysis. In 1941, three samples were averaged; in 1942, four samples.

¶ Samples from only two rows; the other two rows were considered "failure" in yield.

‡ Fertilized Golden Ball and unfertilized crop did not develop in 1942.

The proportion of leaves acceptable for cooking was highest in the 1941 crop, the range being from 70 to 77 per cent of the gross weight of the sample used for analysis. In the next two years the acceptable leaves constituted from 52 to 66 per cent of the gross weight. This may be accounted for in part in the 1942 crop by the poorer general condition of the greens—plants uneven in size, many weather-beaten leaves, many with rusty spots, and much insect injury. Also, it is probable that a greater portion of the root was taken in the process of harvesting in 1942 and 1943 than in 1941, thus lowering the percentage of acceptable leaves. Within the same season, there appeared to be no definite trend in the relative positions of the varieties respecting the proportion of leaves retained for cooking.

Those who washed the greens definitely preferred Shogoin because of its smooth surface and edge. The pubescence on the surfaces of Purple Top and Seven Top made these varieties less pleasant to handle; the leaf lobes of Seven Top and the very crinkled leaf of Golden Ball made them more difficult to wash, and Golden Ball was the least acceptable for this reason.

Content of Nutritive Constituents

Results of chemical analyses are given in Table 2 on both the fresh and the water-free basis. The outstanding feature of these data is the general agreement among varieties within a series, rather than differences, for each constituent. Although Golden Ball was definitely the poorest yielding variety with many of the plants not well developed, its composition was similar to that of the other varieties. Indeed, in both plantings in 1943, it ranked first in calcium and iron content. In no series was it in lowest place for any constituent except for water in one series in which the extreme difference between the four varieties was 0.79 per cent. Similar finding of high content of nutrients in poorly developed plants has been reported by Sheets (4).

The close varietal agreement in water content was remarkable (Table 2), the extreme differences in average percentage content within series being in consecutive order, 0.69, 1.77, 1.05, 0.57, and 0.79 per cent. Water content was greater in the fertilized greens, the difference between corresponding fertilized and unfertilized samples being significant for all varieties in the 1941 crop, but not significant for any variety in the 1943 crop (Table 3).

Effect of fertilizer on the other constituents studied is shown also in Table 3. Yield was increased by fertilizer in only one variety, Shogoin, in 1941; but

yield of fertilized greens was greater in all varieties except Golden Ball in 1943.

On the fresh basis, the calcium content of the fertilized plantings was less than in the unfertilized with exception of the Purple Top greens in 1943. Fertilizer also decreased the iron content of all varieties except Golden Ball in 1943. Phosphorus content was increased in all varieties by fertilizer, except Seven Top in 1943. Similar effect of fertilizer has been reported by the Southern Cooperative Group in their cooperative study of the mineral content of Seven Top turnip greens (5, 6).

Despite the close varietal agreement in water content, there were a number of discrepancies between findings on a fresh and water-free basis in both the comparison of fertilized with unfertilized samples (Table 3) and varietal comparisons within the fertilized series (Table 4) and the unfertilized series (Table 5). The difference between fertilized and unfertilized samples on the fresh basis was significant for calcium in Purple Top greens only (1 per cent level), while on the water-free basis, the difference was significant at the 5 per cent level for this variety and also for Seven Top and Golden Ball. On the fresh basis there was significantly less iron in the fertilized than in the unfertilized samples of both Seven Top and Golden Ball in the 1941 crop and Purple Top in 1943; but, no differences in iron content were significant on the water-free basis.

In the fertilized series (Table 4), the varietal difference in calcium content on the fresh basis for 1943 was not statistically significant, but on the water-free basis, Seven Top contained significantly less calcium at the 5 per cent level and Shogoin at the 1 per cent level than did Golden Ball.

In the unfertilized series (Table 4) Purple Top grown in 1941 contained on the fresh basis, significantly less phosphorus at the 5 per cent level and Shogoin at the 1 per cent level, than did Seven Top. However, on the water-free basis there were no significant varietal differences for phosphorus. On the fresh basis, three varieties contained significantly less iron—Shogoin and Purple Top at the 1 per cent level and Golden Ball at the 5 per cent level—than did Seven Top in the 1941 crop. But, on the water-free basis, only Purple Top differed from other varieties—at the 5 per cent level from both Seven Top and Golden Ball. On the fresh basis, in 1943

TABLE 2

Nutritive content of four varieties of turnip greens

TREATMENT	VARIETY	FRESH BASIS					WATER-FREE BASIS			
		Water*	Calcium	Phosphorus	Iron	Protein	Calcium	Phosphorus	Iron	Protein
					1941					
		%	%	%	%	%	%	%	%	%
Fertilized	Seven Top	92.44	0.16	0.068	0.0014	No data	2.17	0.897	0.0191	No data
	Shogoin	93.13	0.16	0.050	0.0011	No data	2.27	0.733	0.0167	No data
	Purple Top	92.51	0.17	0.065	0.0013	No data	2.31	0.867	0.0171	No data
	Golden Ball	92.56	0.17	0.063	0.0013	No data	2.28	0.853	0.0179	No data
Unfertilized	Seven Top	89.26	0.32	0.044	0.0023	No data	2.97	0.410	0.0213	No data
	Shogoin	91.03	0.27	0.033	0.0017	No data	3.00	0.367	0.0192	No data
	Purple Top	90.30	0.30	0.035	0.0017	No data	3.05	0.363	0.0172	No data
	Golden Ball	90.84	0.28	0.038	0.0019	No data	3.07	0.420	0.0211	No data
					1942†					
Fertilized	Seven Top	92.09	0.22	0.062	0.0016	2.7	2.83	0.780	0.0197	34.5
	Shogoin	93.14	0.15	0.055	0.0012	2.3	2.21	0.800	0.0172	34.3
	Purple Top	92.35	0.23	0.056	0.0017	2.7	2.94	0.740	0.0220	34.7
					1943					
Fertilized	Seven Top	91.38	0.25	0.054	0.0017	3.1	2.84	0.620	0.0194	35.7
	Shogoin	91.85	0.21	0.048	0.0012	2.8	2.55	0.590	0.0150	34.6
	Purple Top	91.28	0.26	0.052	0.0016	3.0	2.95	0.600	0.0178	33.9
	Golden Ball	91.68	0.28	0.053	0.0021	3.0	3.42	0.630	0.0252	35.3
Unfertilized	Seven Top	90.54	0.27	0.055	0.0018	3.3	2.88	0.590	0.0196	35.1
	Shogoin	90.78	0.25	0.044	0.0015	2.8	2.66	0.480	0.0163	30.8
	Purple Top	91.02	0.25	0.049	0.0017	3.0	2.77	0.550	0.0186	33.2
	Golden Ball	90.23	0.32	0.050	0.0019	3.3	3.30	0.520	0.0194	33.7

* 100 per cent = weight of sample after washing and wiping but before wilting.

† Fertilized Golden Ball and unfertilized crop did not develop in 1942.

TABLE 3

Comparison of fertilized and unfertilized samples†‡ for each of four varieties of turnip greens from two years' crops

FACTOR COMPARED	1941			1943		
	Relative position		Fertilized minus unfertilized	Relative position		Fertilized minus unfertilized
Fresh basis						
Yield (gm./ft.)	F > NF	Shogoin	16.1	F > NF	Seven Top	38.2
	F > NF	Seven Top	−135.0		Shogoin	90.7
		Purple Top	−8.4		Purple Top	29.1
		Golden Ball	−31.1	F < NF	Golden Ball	−2.1
Water (gm./100 gm.)	F > NF	Seven Top	3.18**	F > NF	Seven Top	0.84
		Shogoin	2.10*		Shogoin	1.07
		Purple Top	2.21*		Purple Top	0.26
		Golden Ball	1.72*		Golden Ball	1.45
Calcium (gm./100 gm.)	F < NF	Seven Top	−0.145	F > NF	Purple Top	0.008
		Shogoin	−0.115		Seven Top	−0.026
		Purple Top	−0.123**	F < NF	Shogoin	−0.038
		Golden Ball	−0.113		Golden Ball	−0.040
Phosphorus (gm./100 gm.)	F > NF	Seven Top	0.024**		Shogoin	0.004
		Shogoin	0.017*	F > NF	Purple Top	0.003
		Purple Top	0.030**		Golden Ball	0.002
		Golden Ball	0.025**	F < NF	Seven Top	−0.001
Iron (gm./100 gm.)	F < NF	Seven Top	−0.00084**	F > NF	Golden Ball	0.00019
		Shogoin	−0.0059		Seven Top	−0.00018
		Purple Top	−0.0039	F < NF	Shogoin	−0.00026
		Golden Ball	−0.0061*		Purple Top	−0.00010*
Protein (gm./100 gm.)	No data			F < NF	Seven Top	−0.23
					Shogoin	−0.02
					Purple Top	−0.02
					Golden Ball	−0.33
Water-free basis						
Calcium (gm./100 gm.)	F < NF	Seven Top	−0.80*	F > NF	Purple Top	0.18
		Shogoin	−0.73		Golden Ball	0.12
		Purple Top	−0.74*	F < NF	Seven Top	−0.04
		Golden Ball	−0.79		Shogoin	−0.11
Phosphorus (gm./100 gm.)	F > NF	Seven Top	0.487**		Seven Top	0.030
		Shogoin	0.366**	F > NF	Shogoin	0.110*
		Purple Top	0.504**		Purple Top	0.050
		Golden Ball	0.433**		Golden Ball	0.110
Iron (gm./100 gm.)	F < NF	Seven Top	−0.0022	F > NF	Golden Ball	0.0058
		Shogoin	−0.0025		Seven Top	−0.0002
		Purple Top	−0.0001	F < NF	Shogoin	−0.0013
		Golden Ball	−0.0032		Purple Top	−0.0008
Protein (%)	No data				Seven Top	0.6
					Shogoin	3.8**
				F > NF	Purple Top	0 7
					Golden Ball	1.6

† No unfertilized crop in 1942.

‡ "F" indicates fertilized; "NF," unfertilized.

* Significant at the 5 per cent level.

** Significant at the 1 per cent level.

TABLE 4

Statistically significant varietal differences in fertilized and unfertilized plantings of turnip greens†

ITEM COMPARED	FERTILIZED SERIES		UNFERTILIZED SERIES	
	Fresh basis	Water-free basis	Fresh basis	Water-free basis
1941				
Yield (gm./ft.)	Seven Top* / Golden Ball* \ Shogoin, Purple Top			
Water (gm./100 gm.)	Seven Top**, Purple Top**, Golden Ball** / Shogoin		Seven Top ** / Shogoin, Purple Top, Golden Ball; Purple Top / Shogoin	
Calcium (gm./100 gm.)				
Phosphorus (gm./100 gm.)	Shogoin** / Seven Top, Purple Top, Golden Ball	Shogoin** / Seven Top, Purple Top, Golden Ball	Shogoin**, Purple Top** / Seven Top	
Iron (gm./100 gm.)			Shogoin**, Purple Top** / Golden Ball* \ Seven Top	Purple Top* / Seven Top, Golden Ball
Protein (gm./100 gm.)	No data	No data	No data	No data
1942				
Yield (gm./ft.)			No data; crop did not mature	No data; crop did not mature
Water (gm./100 gm.)	Seven Top**, Purple Top* / Shogoin		No data; crop did not mature	No data; crop did not mature
Calcium (gm./100 gm.)	Shogoin** / Seven Top, Purple Top	Shogoin** / Seven Top, Purple Top	No data; crop did not mature	No data; crop did not mature
Phosphorus (gm./100 gm.)			No data; crop did not mature	No data; crop did not mature
Iron (gm./100 gm.)			No data; crop did not mature	No data; crop did not mature
Protein (gm./100 gm.)			No data; crop did not mature	No data; crop did not mature
1943				
Yield (gm./ft.)	Golden Ball** / Seven Top, Shogoin, Purple Top		Golden Ball* / Seven Top; Shogoin, Golden Ball* \ Purple Top	
Water (gm./100 gm.)				
Calcium (gm./100 gm.)		Seven Top*, Shogoin** / Golden Ball	Seven Top*, Shogoin**, Purple Top / Golden Ball	Seven Top*, Shogoin**, Purple Top** / Golden Ball
Phosphorus (gm./100 gm.)				
Iron (gm./100 gm.)	Shogoin** / Seven Top; Seven Top**, Shogoin**, Purple Top** / Golden Ball	Shogoin* / Seven Top; Seven Top*, Shogoin**, Purple Top** / Golden Ball	Shogoin** / Seven Top, Golden Ball; Purple Top* / Golden Ball	Shogoin** / Seven Top, Purple Top, Golden Ball
Protein (gm./100 gm.)			Shogoin**, Purple Top** / Seven Top, Golden Ball	Shogoin**, Shogoin* / Seven Top; Purple Top, Golden Ball

* Significant at the 5 per cent level.
** Significant at the 1 per cent level.
† Blank spaces indicate no significant differences.

TABLE 5

Average contribution of calcium, phosphorus, iron, and protein to diet from one serving of turnip greens of each of four varieties*

VARIETY	CALCIUM		PHOSPHOROUS		IRON		PROTEIN	
	Content	Proportion of daily recommendation (8)	Content	Proportion of daily recommendation (8)	Content	Proportion of daily recommendation (8)	Content	Proportion of daily recommendation (8)
	gm./100 gm.	%	*gm./100 gm.*	%	*gm./100 gm.*	%	*gm./100 gm.*	%
Seven Top								
Fertilized series	0.21	21.00	0.062	4.70	0.0016	13.33	2.9	4.14
Unfertilized series	0.30	30.00	0.050	3.79	0.0020	16.67	3.3	4.71
Shogoin								
Fertilized series	0.17	17.00	0.051	3.86	0.0012	10.00	2.6	3.71
Unfertilized series	0.26	26.00	0.038	2.88	0.0016	13.33	†	†
Purple Top								
Fertilized series	0.19	19.00	0.058	4.39	0.0015	12.50	2.8	4.00
Unfertilized series	0.28	28.00	0.042	3.18	0.0017	14.17	3.0	4.28
Golden Ball								
Fertilized series	0.22	22.00	0.058	4.39	0.0017	14.17	†	†
Unfertilized series	0.30	30.00	0.044	3.33	0.0019	15.83	†	†

* 100 gm. raw greens; about ½ cup cooked

† For single values in these cases, see Table 2.

the iron in Shogoin was significantly less (1 per cent level) than in both Seven Top and Golden Ball, and less in Purple Top (5 per cent level) than Golden Ball, while on the water-free basis Shogoin alone contained less iron (1 per cent level) than the other three varieties.

The contrast in the findings expressed on the fresh basis and the water-free basis points to the desirability of reporting data on the fresh basis as well as on the water-free basis. Comparison between varieties on the fresh basis appears the more logical, since this basis more nearly approaches their natural state. For application in practical dietary problems, data on the fresh basis are preferable.

Contribution to the Diet

This study affords only the first of three essentials for full dietary evaluation—data on composition, on nutritive retention during preparation, and on human utilization of nutrients when the food being considered is part of an otherwise well-selected diet. Nevertheless, it seems worth while to consider nutritive value as indicated by composition alone, along with some reasonable assumptions. Cooking will not impair the protein value, and if the liquor as well as greens is consumed, there will be no loss of minerals. The content of calcium, phosphorus, iron, and protein in 100 gm. of the raw greens, fresh basis, (one serving, about ½ cup cooked) (7) may then be compared with the Recommended Dietary Allowance for these nutrients for a physically active man as suggested by the Food and Nutrition Board of the National Research Council (8). The calculated maximum, minimum, and average percentages of the daily allowance for each of the four nutrients considering both fertilized and unfertilized samples of each of the four varieties of turnip greens, are given in Table 5.

As has been noted in previous joint reports by Texas workers (7, 9) for Seven Top greens alone, none of the varieties in this study can contribute in one serving an important amount of either phosphorus or protein, the proportion of the total allowance being less than 5 per cent for either of these nutrients, whether fertilized or unfertilized. For both calcium and iron, turnip greens may be considered a dependable source. Few foods will furnish in one serving from one-sixth to over one-fourth of the total daily allowance of calcium as would either these fertilized or unfertilized greens. Considering the low concentration of iron even in foods valued for this mineral, a contribution of 10 to 14 per cent by fertilized and from 13 to 17 per cent in the unfertilized turnip greens is impressive.

Maximum varietal differences in the average percentage contribution of calcium would amount to only 5.0 per cent among the fertilized samples, and only 4.0 per cent among the unfertilized. Even less difference would be shown in the average contributions of iron by the four varieties—maximum of 4.2 per cent for the fertilized and of 3.4 per cent for unfertilized samples. While Seven Top and Golden Ball fell consistently in first or second place for contribution of calcium and iron to the diet, varietal differences were found to be so inconsequential as to leave the choice of variety to other considerations than content of these minerals for which turnip greens are valued.

SUMMARY AND CONCLUSIONS

In a study of four varieties of turnip greens, Golden Ball consistently held lowest place in yield. While there were irregularities in the relative positions of the other varieties, their ranks for yield in descending order were Purple Top, Shogoin, Seven Top. For pleasantness in handling, Golden Ball was least acceptable because of its exceedingly crinkled leaf which made washing difficult. The pubescence on the leaf surface of Seven Top and Purple Top made them irritating to the workers' hands. Shogoin was preferred because of its smooth leaf surface and edge.

A marked varietal similarity was found in the content of each constituent determined—water, calcium, phosphorus, iron, and protein. Thus other considerations than content of these constituents may be used as a guide in selection of variety.

Fertilizer increased the yield in only one-half of the comparisons possible with unfertilized samples. In fertilized samples the water content was slightly greater than in the corresponding unfertilized ones; phosphorus content was greater, but both calcium and iron were less.

Of the four solid constituents determined, only calcium and iron occurred in quantity sufficient to be of practical dietary importance. One serving of these turnip greens would have supplied from 10 to 14 per cent of the Recommended Dietary Allowance for adults for iron and from one-sixth (fertilized) to over one-fourth (unfertilized) of the allowance of calcium. The value of turnip greens for these two minerals was enhanced by omitting fertilizer, on the soil used.

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Scientific Findings May Help World Food Situation

A discovery which may aid in solving the world food problems has been reported by Drs. H. A. Spoehr and Harold W. Milner of the Carnegie Institute of Washington. They have found that the single-called, fresh-water alga—Chlorella—which needs only water, sunlight, and mineral salts for its growth, can be made to produce high yields of either protein or fat, as desired, simply by manipulating its environment and mineral supply.

With such regulation, they have found that the alga can produce as much as half its dry weight as protein, or up to three-fourths its weight as fat. They calculate that as much as 1390 lb. of fat might be produced by Chlorella in a growing season on an acre of water surface. This is much more than can be produced on land, where 227 lb. of soybean oil or 360 lb. of peanut oil is about maximum yield for an acre.

In another study at the University of Wisconsin, Dr. P. N. Agarwal, an Indian scientist, working with Dr. W. H. Peterson, has found that yeasts can grow in sugar and molasses in the presence of air (oxygen) and produce and use up ethyl alcohol. Dr. Agarwal's graduate work at the University has been directed toward helping alleviate food shortages in his native land.

His work has shown that yeast cells eat up alcohol which they themselves produce. The work was done on *Saccaromyces cerevisiae* (baker's yeast), *Torulopsis utilis* and *Candida arborea* (both food yeasts). The value of the discovery lies in the fact that yeasts, which are rich in proteins, B vitamins, and other nutrients, can now be produced cheaply. The yeast continues to grow even after sugar has virtually disappeared, and the alcohol is soon used up by the yeast cells themselves, which derive their growth energy from it.

Although India and other countries of Asia and Europe have not enough protein-rich foods, such as meat, fish, eggs, and dairy products, there is an abundance of sugar and molasses, from which yeast for food purposes could be produced. Thus a part of the great problem of supplying the world's need for proteins and vitamins might be solved by making use of this discovery.—*From New York Times, December 19, 1948, and January 9, 1949.*

Editorial

PUBLIC OPINION

Abraham Lincoln once said, "Public opinion is everything. With it nothing can fail; without it nothing can succeed." This holds true for hospitals as well as for any other enterprise. Public opinion regarding hospitals can serve as a wonderful stimulant; it can also do the reverse.

The general public could easily, in a few days' time, cripple many industries if concerted action were taken. For instance, housewives, if organized, could cripple the meat industry by limiting their purchases; in the same way, if the public would stop buying automobiles for a time, they could accomplish something really beneficial in the way of price reductions. Usually, however, these radical methods of accomplishment are not considered good, and unless carefully thought out and organized, many times they work in reverse due to poor management. In the same way bad public relations, misleading information, and misstated facts can do more harm to public opinion concerning hospitals in a few minutes than can be accomplished by years of good relations. We, in the hospitals, receive hundreds of letters of praise and complimentary pats on the back regarding services, but one unfavorable reaction—one bad news release—upsets us and causes more commotion, grief, trouble, and time to straighten out than all the good news put together.

Why are we so concerned with public opinion? Hospitals depend largely upon public support and must respect public opinion. There is no doubt that there is a definite need for a firm relationship between the hospital and the community. In general, the social position of hospitals is very good. But, are the individual hospitals in a strong position? Hospitals provide an essential service, but are we providing a *satisfactory* service on an efficient basis? Are costs too high? Is food service good? Is the medical staff the best we can provide? Is the staff open or closed? Why? Is the staff interest paramount? Are we trying to justify our service, or are we telling the story of good, efficient service for all classes or for special minority groups? We must believe in our product. Manufacturers do; so should hospitals. Our product is service to the community. We need the support of the public, and we must, therefore, present a convincing case, directed by sincere, effective leadership.

Hospitals generally have been very lax in releasing to the public information the public should have. Because, in effect, they belong to the public by virtue of the essential service they furnish, the public must be informed of everything—good or bad—regarding the workings of its hospitals.

Criticism is often directed at a hospital and its administration by those who, by association with a hospital, proffer opinions and pass judgment. Hospital authorities constantly offer the excuses that they have untrained personnel, rising costs, shortages of supplies, and so on. I cannot see why these apologies are put forth to justify a shortcoming of hospital service. Rates are generally high enough now to warrant trained personnel, to pay living wages, to be able to purchase supplies, and to give good food and service. Hence situations causing such excuses can be corrected. If rates in a particular hospital are not high enough to correct these conditions, then a change in administration is needed—a change to which the public, who pays the bills, is entitled. Trustees want to know why annual deficits continue to mount in the face of increased operating income. The public also wants to know.

PATIENT RELATIONS

We should always consider our patient occupancy. This has a great deal to do with public relations progress. Changing requirements for the major group of our patients must be considered. Is the community made up of individuals of independent means, or is it composed predominantly of moderate wage earners, or is it made up of a large percentage of so-called indigent persons? These are important factors in planning for the future and important as to the information you give to the public. Facts concerning the amount of paid work, free work, and clinic work done by a hospital are vitally important topics for public release, but they should be given in a manner the layman can understand.

In everything a hospital does, the needs of the public must be considered. The patient, his relatives, friends, associates, tradesmen, and visitors are all part of the hospital's public. They constitute the channels through which important public relations are established daily. Their experiences—incidents, perhaps, witnessed by one group, and conversations in which they engage or have over-

heard—are matters for general discussion or gossip. Their reactions or experiences many times help or hinder an institution, and favorable or unfavorable public opinion results.

We must not overlook the fact that the dietary department is right at the top of the list when it comes to public opinion of hospitals. Such expressions as, "the food was terrible," "the meals were excellent," "the food was served cold," "the trays were attractive," and "the dietitian appears to know her business," are statements we hear repeatedly throughout the community. In fact, comments concerning a hospital's food service are more common than those about any other service of a hospital.

You, as dietitians, must insist on policies of efficiency, quality, and attractiveness for the patients' food, whether they are having a full-course dinner or a glass of orange juice. Always maintain the highest standards. Impress upon your administrator, if he is not concerned, how important you and your department are insofar as public opinion is concerned. Unfortunately, some administrators still frown on good food service, special diets, or any extra consideration of the dietary department, even though quality and excellence of food service is the best selling agent for any hospital.

But the other groups or departments in the hospital are equally as important and the manner in which they handle their contacts with patients also molds public opinion concerning the hospital. For instance, patients are usually satisfied if the admitting officer and office personnel are courteous, decent, kind, and understanding. Weakness in this feature can almost make or break a hospital's public relations. Likewise, friendly, efficient nursing service and an attitude of kindness and respect by all employees reflect most favorably on the patient and the patients' friends. Always remember that it is the hospital's job to satisfy patients, to keep the patients' families and friends happy, and to convince the public that their hospital is rendering a good service to everyone concerned.

PATIENT POLICIES

Patients may not understand hospital policies. They may be confused about the Blue Cross Plan, what benefits they are entitled to and extra charges. They are confused about visiting hours, restrictions about this and restrictions about that, and, in the majority of cases, they are not enlightened properly. We should explain to them, and to the public, why visiting hours are necessary and why there are restrictions. We should explain also the regulations regarding children visiting the hospital.

One effective way to accomplish this is to prepare a comprehensive informative booklet to be given to every patient. Such a booklet would cover everything a patient or a member of his family should know. It can also be used to explain the vast difference between hospital service and hotel service, for, although this comparison is made many times, it is certainly not a fair one. If the information is presented properly, this booklet will do much to stimulate interest in the hospital and also give the public the information it needs.

Another publication which can be an effective public relations tool is a booklet which invites suggestions and criticisms from patients, visitors, and members of patients' families. In this way, you can show the public that you are seeking information that will, perhaps, be beneficial to someone, and you will also prove that you are looking for deficiencies.

The public at large is heard to say that the cost of hospital care is too high. Has any attempt been made to explain to the public *why* costs are high? In most cases, I doubt it. The medical staff, likewise, in many institutions claim that hospital rates and charges are excessive. But, has anyone told them or explained to them about the increased costs and expenses? I doubt that also. Employees, too, are likely to be in the same position; they know nothing or very little about the operation of the hospital in which they work.

Why not prepare another informative booklet, or even a leaflet, showing how the hospital dollar is spent? This could be distributed to patients, staff, and employees alike. Such statistics need not be dry or uninteresting; charts and picture stories can be developed to show the situation in easy-to-understand terms which will appeal to all segments of the hospital's public. In this regard, annual reports, if physically attractive and intelligently edited, are also most effective in aiding a public relations program.

RELATION BETWEEN PERSONNEL AND PUBLIC RELATIONS

Morganstein in his *Basic Principles of Public Relations* says: "Be positive that your house is in order. Start with your personnel relations. It is a paradox that any of our institutions which strive for the general good are often unconcerned about conditions regarding their own employees." To me, employee relations is one of the most important phases of a public relations program.

In this regard, even though strictly speaking, trustees or directors are not employees, I believe they should be considered first in discussing the relation between public and personnel relations. A sound board of informed directors or trustees should be the hospital's leaders, because the public wants to know "who said what." We should evaluate the prestige of our board members, medical staff, or women's auxiliaries in this light. It is unfortunate that in many instances the public is aware that some of the board members are of little value to their hospital.

But the selection of the board is only the first step. Frequently board members know too little about their hospital. It is, therefore, quite necessary to

sell the board on what they should know about their institution before they attempt to sell it to the public. Then, the information they give to the public is much more effective both because they are respected citizens and because they know the facts.

In a like manner the selection and education of the women's auxiliaries are key links in a hospital's public relations program.

Just as important are your paid employees, who, whether professional or lay, come in contact with patients, patients' families, and the general public. If they are disgruntled and dissatisfied, they are not efficient and do a lot of talking usually detrimental to the hospital. Therefore, consider the economic situation of the employee. The day when hospital personnel should be underpaid is over, as is the time when we could say that the hospital employee donates some of his time to charity. Why shouldn't the hospital employee be paid an honest, living wage and have decent hours comparable to other wage earners?

The physical welfare of employees is also the concern of the hospital public relations program director. I was recently asked to review a hospital's building program. The facilities for the employees, such as dining room, wash rooms, living quarters for technicians and interns, are far from adequate in their present building. Yet, although they are increasing the bed capacity by 100 per cent, no thought was given to expanding the facilities for employees. Such a situation can only breed discontent among employees, which is reflected in this hospital's public relations.

One of the first hospital public relations objectives is to make employees happy. Make them enjoy being associated with the hospital, and you have a good start for a sound program. Keeping them informed is one way to accomplish this. A thorough educational and training program can teach them what to say at the right time. Give them legitimate reasons for the existence of hospitals, hospital expansion programs, and hospital standards. Teach them how important they are in protecting the public and why their work is necessary. Then, because they are well informed and enthusiastic about the hospital, they can be a positive influence on the attitude of the general public toward your institution.

Employees should also be taught the importance of their relations with patients. We, and they, should always remember that the patient or his family feels that he is important to himself and to everyone else in the hospital. To the hospital, it is true, he is but one of a large number of patients, but employees should never let him feel that he is an object of daily tasks or routine. To him, it is not routine. Don't allow him to get the impression that his credit rating is more important than his appendix. We must give all patients well rounded service regardless of their ability to pay.

IMPORTANCE OF NEWSPAPERS

We know the press is a valuable agency for molding public opinion. In fact, the press *is* public opinion; it can help to gain public understanding and appreciation of hospital service. It can clarify in the public's mind the status of the voluntary hospital and can help to build an attitude of genuine goodwill toward the hospital. But, through fear and/or lack of understanding we fail to take advantage of this powerful medium. We should use a little cordiality, politeness, and cooperative spirit with the newspapers, and by so doing many difficulties with the press can be avoided. Evasion or concealment many times reacts unfavorably and hurts the hospital. Do you fail to give the press the facts? Do you conceal the information it desires? If a hospital is giving service to the public, *should* any ethical item of public interest be withheld? The press will recognize the ethics involved in the situation and will exercise discretion and good judgment.

Give true facts, for news is only as accurate as its source. Hospitals must be willing to establish facts and should have precise sources readily accessible to the papers. But, give the facts in understandable language. Recently I read a newspaper article describing services given in a hospital which told the number of free "patient days." This type of information released to the public has no meaning because the average person doesn't know what a "patient day" is. It could have easily been clarified by telling how many patients were treated, the average number of days' care given, and the community from which the patients came.

OTHER PUBLIC RELATIONS APPROACHES

Techniques in preparing printed material for public consumption are going forward at a rapid rate, and intelligent use of these techniques can be employed effectively in a public relations program. Informative booklets telling about hospital rules and regulations, and expenses, as well as literature requesting suggestions and presenting the annual report have already been mentioned. The money and time spent to prepare this informative type of publication will return threefold in goodwill and good public relations.

Bulletins and house organs are good media for low pressure publicity. They can be used to give information to employees, staff, board members, and the general public alike. To be effective, they should be issued at regular intervals so that people get in the habit of looking for them.

Let the public know. Give the public all the facts. If they are told the real story they will understand, and I believe that their support of your hospital will increase as the years go by.—*Anthony W. Eckert, F.A.C.H.A., Administrator, Fitkin Memorial Hospital, Neptune, New Jersey.*

Current Comment

TRAINING PROGRAMS FOR SUBSIDIARY WORKERS

JANETTE C. CARLSEN[1]

The Johns Hopkins Hospital, Baltimore, and Chairman, Project #3, 1947–48, Food Administration Section, American Dietetic Association

Present building programs and planned future expansions of schools, colleges, industries, and hospitals are a challenge to all interested in maintaining a supply of qualified professional personnel as well as trained subsidiary workers.

A brief picture of hospital expansion alone will point up the pending crisis in this respect. A research report by the Twentieth Century Fund (1) showed that hospital beds needed to meet the growth in population in this country would total 1,597,000 in 1950 and by 1960 the need would be for 1,696,000 beds—an increased need in ten years of 100,000 beds. To meet the need many hospitals are already building new units or expanding existing facilities. A poll of hospital administrators and architects conducted by *Hospital Management* (2) showed the following facts: Of the architects questioned, 37 per cent were drawing plans for more than 5 hospitals; 14 per cent were planning 5 hospitals; 11 per cent were working on plans for 3 hospitals; and only 5 per cent did not have any plans for hospital expansion on their boards. Of the hospital superintendents who replied to this survey, about 50 per cent had gone beyond the sketch stage in planning and had established definite dates of building. Fifty per cent planned to start building the first half of 1948; 16 per cent would start in the second half of 1948; 11 per cent the first half of 1949, 10 per cent the second half of 1949, and 5.5 per cent later than 1949. Only 16 per cent were indefinite as to the dates they would start building or expanding. The picture regarding existing as well as future expansion in schools, colleges, and industries is comparable. Such growth can only result in increased activity of the nutrition and dietary service, and, with the existing shortage of dietitians, this planned expansion is truly a challenge to the profession of dietetics.

One solution to the problem of a lack of qualified dietitians has been to establish training programs for subsidiary personnel. Then, by delegating more responsibility, professionally trained dietitians can be relieved of tasks than can be done by less highly trained workers, at the same time providing better service to their institutions.

If subsidiary or auxiliary workers are to be a solution to the shortage of professional personnel, employee training must be instituted. In 1947, the American Dietetic Association published *A Guide to the Selection and Training of Food Service Employees* (3) which was prepared by a committee of the Food Administration Section. This book is divided into two parts—the preparation for a training program and the training program itself—and is designed to aid the dietitian in any field to plan and conduct a training program for food service workers.

In developing training experience, the extent of the responsibility given to the subsidiary workers must be clearly outlined and defined. Since such a definition is largely determined by trial and error and the experience of others, it seemed that dietitians could benefit by the experience of other dietitians. Thus the object of the 1947–48 Project #3 of the Food Administration Section was to collect and list manuals and teaching plans, and then to summarize the information included in such publications by making a check list to be used in establishing or improving existing training programs. Only those programs which had actually been developed to the point of a written outline could be considered, although the committee realized that there are many other successful programs which have not been formalized in writing.

A committee of six was appointed and assigned certain states from which to procure material. Presidents of state associations were asked to furnish lists of members likely to have training programs for subsidiary personnel. These members were in turn asked to send material to the committee. Requests were sent to 139 dietitians. Seventy-four replied that they either had no training program or were still in the process of developing one; 28 sent teaching plans, manuals, or course outlines; and 37 did not reply. A total of thirty-six outlines and course plans

[1] The chairman wishes to express her appreciation to the members of the American Dietetic Association who contributed in any way to this project, and particularly to the members of her committee: Edith M. Ferguson, Alameda County Hospital, Oakland, California; Ruth M. Kahn, Michael Reese Hospital, Chicago; Kathryn W. Heitshu, Medical College of Virginia, Richmond; Magdalin K. Espy, St. Luke's Hospital, Cleveland; Ruth I. Madsen, Methodist Hospital, Indianapolis; and R. Alberta Hughes, Kennedy Veterans Administration Hospital, Memphis.

was collected. These programs included training plans developed by dietitians in connection with and under the direction of the personnel department; those developed by dietitians using *A Guide to the Selection and Training of Food Service Employees* (3) and *Job Instruction Training* of the Training-Within-Industry Division of the War Manpower Commission (4); those developed by state vocational education departments; and those developed in commercial establishments.

Of those collected, twenty-one plans were developed by the hospital dietary service alone; seven were developed by the dietary service with the help of the personnel department; two were developed by state education departments; three were developed in college dining halls; and three were worked out by the personnel department alone.

Before a training program can be developed and applied, the supervisor should be introduced to the principles of training. Therefore, the compilation of these collected manuals was divided into two sections. In one section are discussed training programs and outlines used in the instruction of supervisors or trainers; the other is comprised of manuals and course outlines for the subsidiary worker. The outlines and manuals include a training syllabus for the supervisor to use in dealing with job relations problems and personnel policies, safety instruction, in-service training techniques, and essentials of job orientation.

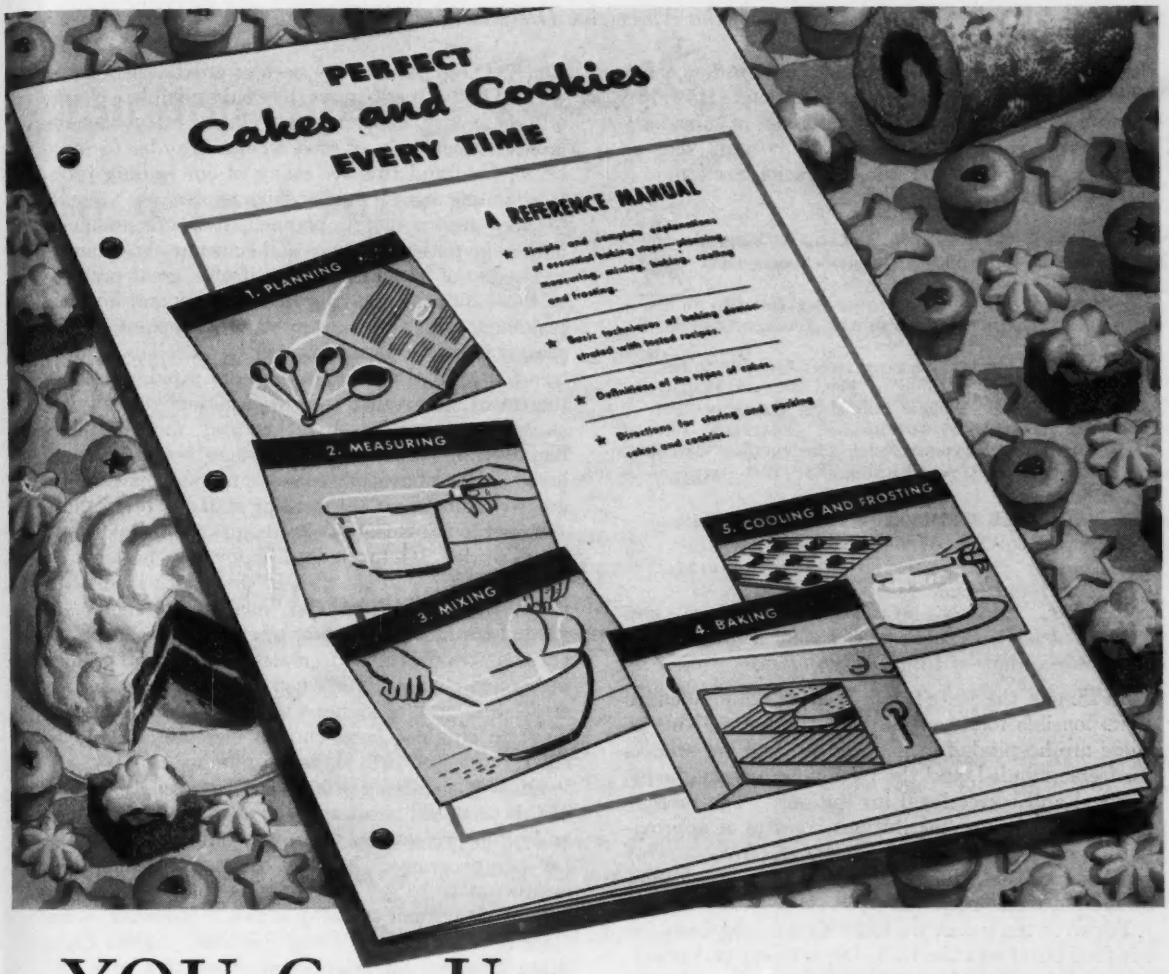
Plans for training the following types of workers are represented in the collection: hospital counter women, waiters, dishwashers, ward food service workers, pantry maids, diet aides, cooks, bakers, and meat cutters. In the collection are several courses for food service workers in general and one on the operation and care of equipment.

From the outlines and manuals, a check list was devised which can be used in planning and testing a training program for subsidiary workers. This check list follows:

I. Organization of the course
   A. Determine the needs of the group and start the educational process as soon as possible after an employee's induction
   B. Organization of the course
      1. Title
      2. Objectives
      3. Duration
      4. Qualifications of those to be instructed
      5. Type of course
         a. In-service training
         b. Off-the-job training. Time for this type of course should be deducted from working hours if course is to be of value.
      6. Method of presentation
         a. Discussion and demonstration
         b. Lecture
         c. Group discussion and decision
      7. Classroom. Use a suitable demonstration unit or quiet classroom.
      8. Number in course. Include not more than twenty in one class, so that all may participate in the discussions.
      9. Brief outline of content
      10. Instructors. Engage some outside speakers to increase interest and authority
II. Presentation
   A. Educational level of class. Plan learning experiences according to trainees' previous experience, presenting only a limited number of points during one class period.
   B. Motivation
   C. Suitable and timely visual aids
III. Content
   A. Introduction; reason for course and objectives
   B. Standardized routine and policies throughout food service unit
   C. Specific work procedures; job breakdown sheets
   D. Personal relation of employees to patients, co-workers, and employing organization
   E. Sanitation
   F. Personal hygiene, including food habits
   G. Operation and care of equipment
   H. Accident prevention and first aid
IV. Evaluation. Good evaluation leads to improvement, growth, and perfection of the training program.
   A. Records of improvement in worker performance
   B. Labor turnover since course was started
   C. Absenteeism since course was started
   D. Formal testing of the trainee
V. Follow-up. Definite responsibility for the follow-up period should be assigned
   A. Review and clarification of new worker's responsibility
   B. Check on performance
   C. Additional instruction in motion economy and smoothness of expenditure of energy
   D. Development in the worker of a feeling of pride and "worthwhileness" of the job

It is the hope of this committee that the material collected can be used by the members of the American Dietetic Association in developing training programs in their own situations. The manuals collected during the course of this project have been placed in the Association's Loan Library and may be borrowed by members.

Unfortunately, it has not been possible to ascertain from the material gathered just how much responsibility can be delegated to the subsidiary workers



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before the service to patients or clients suffers, since this varies with the individual situation. However, further work on the problem of the use of subsidiary workers is under way during the current year as Project #1 of the Food Administration Section.

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PROBLEMS IN DIETARY DEPARTMENTS IN STATE HOSPITALS[1]

ETHEL J. BOYLE

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In Illinois, the State Department of Public Welfare is responsible for twenty-five institutions. Nine of these are hospitals for mentally ill, two are schools for feeble-minded, and the remainder are small educational and correctional institutions. The present population of these institutions consists of approximately 45,000 patients and 9,000 employees. Our greatest problem, therefore, is in serving more than 54 million meals each year.

For over ten years, we have used as the basis for our food purchases the U. S. Department of Agriculture Circular No. 296 entitled "Diets at Four Levels of Nutritive Content and Cost," prepared by Hazel K. Stiebeling and Medora M. Ward, Food Economists for the Bureau of Home Economics. An adequate diet at low cost is used for patients and an adequate diet at moderate cost for employees. Food is requisitioned quarterly by the institutions' dietitians. These requisitions are checked by the Division of Home Economics and Nutrition in the general office before being sent to the state purchasing agent.

This brief outline will acquaint you with Illinois procedures and problems, particularly those concerning personnel, food preparation and distribution.

PERSONNEL PROBLEMS

Our major personnel problem is our shortage of dietitians. In order to avoid lowering our dietetic standard too much by accepting unqualified people, we created a position of "Food Service Supervisor" for those women having food experience, but lacking educational requirements for professional recognition. These people have been of great assistance to us, and in five institutions they have complete charge of the dietary department. Thus we try to have greater supervision of food service in order to serve better food and to solve many of our feeding problems among mental patients, particularly. No matter how well a diet is planned, it is not adequate unless the patient receives and consumes his share.

The use of patient help is in itself a great problem to those dietitians having had only general hospital training. The turnover in patient population has greatly increased in the last few years. The modern trend is to give mental cases more rapid, thorough treatment, and return the cured patient to his home as soon as possible. In years past, more patients remained in the institutions than were returned home. Consequently, we now find ourselves with a greatly reduced patient working staff and often those assigned to the various departments are too old to do much work. We are indeed happy that patients no longer must spend the rest of their lives in institutions. On the other hand, increased budgets are needed so that the number of employees can be increased to offset the decreased number of patient personnel. At a time when budgets must be increased because of higher wages, it is sometimes difficult to obtain a large enough increase actually to enlarge the staff by a sufficient number.

Employee training programs are especially needed at this time, but because of the shortage of dietitians and other professional staff, it is difficult to arrange for such programs. Most of the staff feel that they are fortunate to get routine work done without assuming additional teaching duties. However, some steps have been taken along this line. At the Elgin State Hospital an orientation course for new employees has been established. One full week is set aside and new employees are introduced to all departments and talks are given by all supervisors.

Another institution—Manteno State Hospital—is giving a series of six lessons for training of dining room employees. This course includes:

(a) How to get along with patients.
(b) Using and cleaning the coffee urn.
(c) Care of the refrigerator.
(d) Using and cleaning the dishwasher.
(e) Scouring dishes.
(f) Cart and counter service.

During the war we established several large-scale canneries in our institutions, and a canning school is held at Kankakee State Hospital each spring to train new canning foremen from all institutions. It also serves as a refresher course for the previous canning foremen and our dietitians. A review of canning procedures is usually given by representatives of the company from which we purchase cans. Problems of the previous year are discussed by our canning supervisor, and samples of fruits and vegetables from each institution are graded and discussed.

[1] Presented at the 30th Annual Meeting of the American Dietetic Association in Philadelphia, on October 16, 1947.

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. . . over 99% pure, unadulterated, sparkling-white crystals. It is a natural, not a "synthetic" product. It is the sodium salt of the amino acid, glutamic acid, which occurs naturally in all vegetable and animal protein. Ac'cent is wholesome and good.

FOOD PREPARATION AND DISTRIBUTION

We now come to food preparation problems, and in Illinois we find that insufficient equipment and limited funds to purchase new equipment are our main problems. At one time it was thought that low-cost menus must consist largely of stock-pot prepared dishes. This, of course, is not true, and we are trying to prepare more interesting menus by the installation of stack ovens, compartment steamers, large-scale mixers, and other necessary equipment. The addition of ice cream machines and automatic doughnut machines several years ago has resulted in a greater variety of desserts.

The problem of food distribution is one that we have not entirely met. In most of the large institutions, 10-gal. aluminum milk cans and portable food containers are distributed by motorized truck to the various dining rooms. Here the food is transferred to steam tables or to food carts if cafeteria type service is not practical. The use of large containers as well as the handling of food several times is not conducive to retaining attractive appearance.

The use of electric food carts, although ideal, is not practical in institutions where cottages are widely scattered and often not connected with sidewalks or tunnels. This problem was solved in one hospital where the modern kitchen is surrounded by several buildings and connected to it by tunnels. Electric food carts used for transporting the food fit into the cafeteria serving set-up; thus rehandling of food is avoided. In this institution, where each building houses approximately 110 patients, the group is small enough to be easily supervised. However, in some of our large dining rooms as many as 1200 to 1800 patients must be fed in shifts. This results not only in periods of rushed eating, but also confusion and inadequate supervision. Since we cannot do away with our old buildings, some of which are over fifty years old, we must continue to hunt for other ways of improving food service. As far as future construction work is concerned, I am sure we shall remember the difficulties connected with handling large groups which we have and are experiencing.

Thus, it can be seen that the Department of Public Welfare in Illinois is attempting to set up a progressive program for the advancement of our institutions. We have set our goal high and realize that it cannot be reached without perseverance on the part of everyone.

Lithium Intoxication

Recently, in the form of lithium chloride, lithium has been used as one of the ingredients of a table salt substitute which is sometimes given to patients who are following a low-sodium diet. In the February issue of *University Hospital Bulletin*, University of Michigan, Dr. Alexander Minty Waldron has reported four cases of lithium intoxication, two in detail. Symptoms manifested by these patients included blurred vision, a feeling of exhaustion, generalized muscular weakness, marked unsteadiness of gait and jerky tremor of the arms, severe constipation, moderate anorexia, mental confusion, and loss of memory. When the salt substitute was withdrawn, the symptoms of these patients disappeared. Since then, other patients under Waldron's observation have had similar symptoms which ceased soon after the lithium chloride was discontinued.

Recent reports regarding the clinical effects of lithium are meager, and the older literature is difficult to locate. The modern pharmacology texts either do not include lithium or give it, at most, a cursory mention. Cushney, working with frogs, reported a depressant action on the motor nerves, due to lithium. Good found that lithium chloride when given either orally or by injection to cats, caused nausea, vomiting, and diarrhea shortly after administration, and that death followed later. Wood, Kolipinski, and Cleaveland have reported toxic reactions in human patients treated with lithium compounds.

Waldron does not attempt to explain the mechanism of the action of lithium in his patients. He states: "Whether or not a low-sodium diet increases intolerance to lithium or whether it is merely the individual biological variation, remains to be seen. A third possibility for the intoxication is impaired renal function of any combination of the three."

Recipes and Food Habits

A poll of homemakers taken by the Home Makers Guild of America has shown that for 77.9 per cent of those questioned, cook books are the main source of recipes and cooking information. Other sources, in their order of popularity, as reported by this poll, are: magazine columns, family recipes, friends' recipes, newspaper women's pages, package labels, manufacturers' pamphlets, and radio programs.

Homemakers were also asked which type of recipe is most useful. It was found that 65.1 per cent of the women questioned get more use from cake, cookie, and pastry recipes; 39.5 per cent find salad recipes most useful; 39.4 per cent, casserole dish recipes; 38.1 per cent, desserts other than cakes, cookies, and pastries; and 38 per cent, main meat dishes. Other types of recipes which are considered useful, but by much smaller percentages of women are: party dishes, sandwiches, and beverages. (A number of women listed more than one type of recipe in answering this question.)—*From Food Field Reporter, October 11, 1948.*

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A Leading Dietitian Says . . .

"There is always danger that food free from crude fiber, and therefore safe for bland diets, is also free from minerals, vitamins and appetite appeal. All too often it becomes what patients call a 'blah' diet."

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3. Patients relish Quaker Enriched Farina because it looks good and *is* good. They enjoy its delicate, creamy flavor and smooth texture. And this tempting hot cereal can be served in such a variety of ways: With cooked and strained fruit juices, with hot eggnog or hot malted milk, or with sparkling jelly for color contrast.

Quaker Enriched Farina is quickly cooked and is highly digestible. It is very economical. And so appetizing that you will find your patients looking forward to Quaker Farina mornings.

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Book Reviews

Manual for Teaching Dietetics to Student Nurses. Prepared by the American Dietetic Association in cooperation with the National League of Nursing Education. Philadelphia: W. B. Saunders Company, 1949. Cloth. Pp. 487. Price $4.25.

Prepared under the joint sponsorship of the American Dietetic Association and the National League of Nursing Education, this *Manual* will be a boon to the dietitian teaching student nurses. It should also be welcomed by both the nurse educator who draws the broad plans for construction of a basic curriculum and the nurse instructor responsible for the individual clinical courses. The content of the manual is authentic and comprehensive. In step with the present day efforts to show the student her place in the total health program, it emphasizes the socio-economic aspects of nutrition; the psychologic problems met in the feeding of patients in the hospital, and of families in the community; the place of diet in rehabilitation; and the too-often-neglected opportunities for the nurse to share in teaching of both diet as a therapy, and normal nutrition. The integration with both natural and social sciences and clinical courses is noteworthy.

The presentation shows the possibilities for adjusting the subject matter to meet a variety of curriculum patterns. The minimum essentials of the content are starred to aid in telescoping the material to fit any allotment of hours. The subject matter is sufficiently detailed to help the inexperienced instructor, yet broad enough in scope to be valuable to those requiring little or no guidance.

The book is divided into five sections as follows: I. Objectives and Evaluation; II. Nutrition; III. Laboratory; IV. Diet Therapy; and V. Dietary Experience.

In Section I, desired objectives in the following four areas are discussed in relation to the planning of a curriculum: appreciation, knowledge, reasoning, and skills. Suggestions are made for effective teaching through application of nutrition information to the life situation, and through reason rather than memory. To evaluate the student's achievement, an outline of specifications is included to measure her competence.

The Nutrition and Diet Therapy Sections present the subject matter in units, consisting of:

(a) Objectives to be attained.

(b) The content in detailed outline form.

(c) Suggested learning experiences for each topic.

(d) Supplementary workbook material, applicable to any situation.

(e) Essential terminology.

(f) References—both for the student and the instructor.

Section III outlines a laboratory plan in ten units to correlate the content on nutrition included in the proceeding section. With each lesson is workbook material summarizing the principles and practices followed. The list of references includes suggestions for appropriate visual aids. There is also a unit on planning and equipping a nutrition laboratory.

The purpose of the dietary experience as an opportunity to interpret and apply nutritional knowledge to the total treatment of the patient is ably discussed in Section V. The many plans outlined, with suggestions for a work manual, should prove especially helpful to schools seeking to make the student nurse's practice in diet therapy an educational experience.

The manual is worthy of study by nurse instructors, not directly concerned with the teaching of nutrition, as an example of curriculum construction which is guided by sound principles. It illustrates a means by which continuity can be secured throughout a series of related courses, though they may be distributed throughout the basic program. It is, in a sense, illustrative of a teacher's syllabus which combines aids to course construction, teaching techniques, course content including suggestions for clinical practice, and bibliographies.—*Ruth Sleeper, R.N., Director, School of Nursing and Nursing Service, Massachusetts General Hospital, and Margaret Berry, Nutrition Instructor, Massachusetts General Hospital, Boston.*

Manual of Specifications for Canned Fruit and Vegetables. By American Hospital Association. Chicago, Illinois: American Hospital Association, 1948. Paper, spiral bound. Pp. 107. Price $2.50.

This publication brings together in compact, readily available form, U. S. Department of Agriculture specifications; material from the canning trade; and buying, serving, and cost charts on canned fruits and vegetables. Compiled by the Committee on Purchasing Simplifications and Standardization, Council on Administrative Practice, American Hospital Association, it provides dietitians, purchasing agents, administrators, and instructors a quick and reliable reference.

Of special value are directions for recognizing poor quality and specific recommendations as to what probably constitutes the best item to buy for most hospitals.

To one who will use the material carefully and with price quotations at hand, the item to buy, the yield in terms of portions of a given size, and the cost per portion may be quickly ascertained.

There is a good index and bibliography, and an appendix of twenty-four pages completes the volume. The size and type of binding makes possible the book's use as a work book at a desk, or in a production kitchen.—*Anna M. Tracy, Head Dietitian, Florida State University, Tallahassee.*

Human Nutrition. By V. H. Mottram, Baltimore: Williams & Wilkins, 1948. Cloth. Pp. 267. Price $2.75.

This is a concise presentation of the scientific basis of nutrition and its practical application in feeding people. It is a book that will be useful to any dietitian or nutritionist concerned with the problems of feeding people. The principles of nutrition are presented clearly and are interpreted in terms of amounts of foods. Chapters on "Food Hygiene," "Cooking, Processing, and Storage of Foods in Relation to Nutritive Value," "Normal Dietetics," and "The Nature of Foods" give useful comparisons of the composition of foods.

Diets are planned using foods common to the British people, but the Recommended Dietary Allowances of the National Research Council are given.—*E. Neige Todhunter, Ph.D., Head, Department of Foods and Nutrition, University of Alabama, Tuscaloosa.*

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Danger! Curves Ahead! By Miriam Lincoln, M.D. New York: Macmillan Company, 1948. Cloth. Pp. 138. Price $2.50.

The author is Clinical Assistant Professor of Medicine at the University of Washington. As a physician dealing with "dieters," she has gained much in the way of a sympathetic appreciation of the complex problems which an obese patient must face.

The purpose of this small volume as stated in the introduction is "as an aid to those courageous souls who, realizing that they are overweight, have determined to do something about it but need guidance in procedure." As this statement implies, this book begins after the all-important step has been taken, i.e., the "will-to-do." Only a short chapter, "The Menace of Obesity" and a brief concluding chapter, "Maladies Demanding Avoidance of Overweight" can be said to provide much in the way of motivation.

The major portion of the book is devoted to the causes of obesity and the problems involved in a reducing program. The proposed dietary program considers such practical obstacles as the nuisance of preparing food separately from the meals for the family. To avoid this, a general outline of meals also basic for the family menu is given for three levels of caloric intake—800, 1000, and 1500. Advice is also given on how to make adaptations to suit the seasonal variations in availability and how to switch the menus around to comply with family tastes and religious restrictions. Further adaptations to meet the needs of various age groups and special medical problems, such as ulcer, spastic bowel, and colitis, are also mentioned.

In general, the dietary program in this book serves well to guide the patient in selecting meals which are well balanced and nutritionally adequate. However, a large part of the success of a reducing program depends on hitting a "tolerable" level of restriction, and on obtaining sufficient satiety from the food to avoid discomfort and hunger. Thus, an 800- or 1000-calorie diet may provide a weight loss of 2 lb. or more per week, but may be entirely incompatible with the patient's ability to stick to the regime. In this case, an experienced clinician would have been able to make the necessary compromises and save the patient disappointment and failure.

Furthermore, satiety value will depend on individual food habits. In one situation, high satiety value might be obtained through the use of a generous meat intake. In another, the ability to follow a diet might depend on a high intake of bulky foods, or on the use of "familiar foods" or food combinations. If a patient were using a reducing program adjusted in this way to meet his needs and desires, the chief value of this book would be as a supplement in amplifying certain of the answers to questions concerning the reducing program.

Correction. In the December issue of the JOURNAL, *Foods—Production, Marketing, Consumption*, by Jean J. Stewart and Alice L. Edwards was reviewed. The price of this book was listed as $6.35. Unfortunately, the publisher quoted the price incorrectly, and has informed us that the book costs $4.75 instead of the $6.35 as originally listed.

Hutchison's Food and the Principles of Dietetics. By V. H. Mottram and G. Graham. Baltimore: Williams & Wilkins Co., 1948. Cloth. Pp. 727. Price $6.75.

This is the tenth edition of a book which first appeared in 1899 with Robert Hutchison as the author. Its continued use for fifty years is adequate testimony to its usefulness.

The present authors are V. H. Mottram, formerly Professor of Physiology at Kings College of Household Science, London University, who writes with the knowledge and skill of the experienced teacher and investigator, and George Graham, Consulting Physician to St. Bartholomew's Hospital, London. These authors have largely rewritten the text since the preceding edition, because of the newer knowledge of nutrition obtained in the last decade.

The introductory chapter on "The History of Dietetics," written by Sir Robert Hutcheson in 1934, is a beautiful summary of the history of the subject and should be required reading for all dietitians and nutritionists.

The text is presented in four parts. Part I, "Diet in Normal Life," discusses the "function of food" with chapters on energy, protein, mineral elements, and vitamins. Other topics are: processing and storage of foods, cooking of foods, hygiene of foods, digestion and metabolism, and normal dietetics. A minimum of chemistry for the understanding of the subject are given. Experimental evidence is well presented throughout, and liberal references in the footnotes on almost every page provide opportunity for the student to read reports of pertinent research. The theories of nutrition are discussed and evaluated in lieu of dogmatic statements; the discussion on psychology and diet is helpful and the variability of the individual is always kept in mind.

Part II deals with the "nature of foods" classified as "energy foods," "mainly for protein," "mainly for flavor," and "beverages." There is much material here that is not usually readily accessible in one place, and excellent tables of composition and comparisons of various types of food are included.

In Part III, "The Principles of Feeding in Infancy and Childhood," are discussed: diet during pregnancy, artificial feeding, and food for older children. It too, is accompanied by helpful composition tables and references.

The last part of the book covers the principles of feeding in disease with a brief discussion, with menus, of the major conditions which are helped by diet. This section will not be adequate for the therapeutic dietitian but is helpful for those who want the overall picture of dietetics in sickness as well as in health.

Although the menus given follow the British pattern, requirements are discussed in terms of recommendations of the National Research Council as well as those given by the other authorities.

The book can be recommended to all students and workers in the field of nutrition and dietetics for its wealth of information and tables which are not readily found in any other single book.—*E. Neige Todhunter, Ph.D, Head, Department of Foods and Nutrition, University of Alabama, Tuscaloosa.*

Maryland Cooking. By Maryland Home Economics Association, 1948. Paper. Pp. 309. Price $2.25.

This delightful book is a tribute to an organization which must be composed of gourmets! Regardless of their professional positions, the members of this group know good food and how to prepare it.

From beaten biscuits to sweet potato pie, *Maryland Cooking* skips through Sally Lunns, hush puppies, buttermilk doughnuts, Swiss steak paprika, mushrooms in sour cream, asparagus and almonds, japonica jelly, tansy pudding, honey feather cake, and dozens of other mouth-tingling recipes.

This reviewer once enjoyed crab cakes at the old hotel across from the Naval Academy at Annapolis. Here, at last, is a recipe which duplicates these delicacies. Here, too, are the recipes for world-famous Maryland fried chicken. Many other recipes for seafoods, meat, and poultry, so well prepared in this section of the country, accompany them.

Because all the recipes are printed in their original form, some are hard to read. Delightful illustrations make the book more attractive, however.

A talented cook would find many new ideas in *Maryland Cooking* and a novice would be delighted. As a gift, its equal would be hard to find.—*Virginia Monahan Bayles, Instructor in Nutrition and Dietetics, University of Denver School of Nursing.*

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A wheat cereal delightfully flavored with bits of toasted malt, Malt-o-Meal adds a new, tasty, appealing food to the ulcer regimen. Thoroughly bland and devoid of bran, Malt-o-Meal cooks to creamy consistency and ready digestibility in but three minutes. Served with milk or cream, it serves well in the dietary management of gastric or duodenal ulcer, aiding in acid neutralization and in reducing acid secretion. An added advantage is the fortification of Malt-o-Meal with significant amounts of thiamine, riboflavin, niacin and iron. In acute ulcer flareup, Malt-o-Meal may well be served several times daily without fear of cloying the appetite; in the dietary prevention of recurrences, Malt-o-Meal meets every requirement for a chemically bland, easily digested, nutritionally desirable and highly palatable food.

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Current Literature

Contributed by Janette C. Carlsen and Ethel M. Miller, Johns Hopkins Hospital; Mrs. Quindara Oliver Dodge, Women's Educational and Industrial Union, Boston; Janet Engebretsen, Veterans Administration Hospital, Hines, Illinois; and the Journal Staff.

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES

Vol. 216, December 1948

*Sulfate and phosphate excretion in urine of patients on rice diet. W. Kempner.—p. 687.

Rice Diet. The rice diet has modified the course of renal and hypertensive diseases. On the 2000-calorie rice diet a patient can maintain nitrogen balance and if the calories are increased, he can gain weight. Observations of patients on the rice diet showed that urinary sulphate and phosphate excretions occurring on the rice diet were less than before the regime was begun. The kidney was called upon to do much less work when the patient was on a rice diet than when he was on a normal intake, or fasting. The average amount of inorganic sulphate excreted by fourteen hypertensive patients on the rice diet was 90 per cent lower than on a normal diet; likewise, phosphate was 70 per cent less.

AMERICAN JOURNAL OF PUBLIC HEALTH

Vol. 38, December, 1948

*Paper and paper board in the food industry—public health aspects. F. W. Tanner.—p. 1688.

Paper in the Food Industry. Fortunately for the papermaker, the procedures which have been developed over many centuries, and which seem to be necessary for making paper as it is done today, are powerfully germicidal for microorganisms of public health significance and even for those which are not. Coliform bacteria are absent in the pulp stream in paper mills and in finished paper. Bacteria are destroyed in paper mills by pulping under pressure with chemicals, bleaching with strong chlorine, and passage over drier rolls heated to high temperature. Many species of bacteria die out in paper because of lack of moisture. Only aerobic, spore-bearing bacteria survive.

ANALYTICAL CHEMISTRY

Vol. 20, December, 1948

*Chemical assay of food for vitamin E content. M. L. Quaife and P. L. Harris.—p. 1221.

Vitamin E in Foods. A method is presented for the chemical determination of the various tocopherols found in foods. These measurements are of particular value since the tocopherols vary considerably in their activity and the biologic potency of vitamin E depends upon the tocopherols involved. The method can be used to measure gamma- and delta-tocopherols in foods. By difference, an estimate of the alpha-tocopherol content can be obtained.

ANNALS OF INTERNAL MEDICINE

Vol. 29, November, 1948

*Protein balance studies in patients with liver damage. The role of lipotropic agents. L. W. Kinsell, G. D. Michaels, H. C. Barton, and H. A. Weiss.—p. 881.

Vol. 29, December, 1948

*Hypertension as a reaction pattern to stress: summary of experimental data on variations in blood pressure and renal blood flow. S. Wolf, J. B. Pfeiffer, H. S. Ripley, O. S. Winter, and H. G. Wolff.—p. 1056.

*Liver extracts in pernicious anemia. Editorial.—p. 1169.

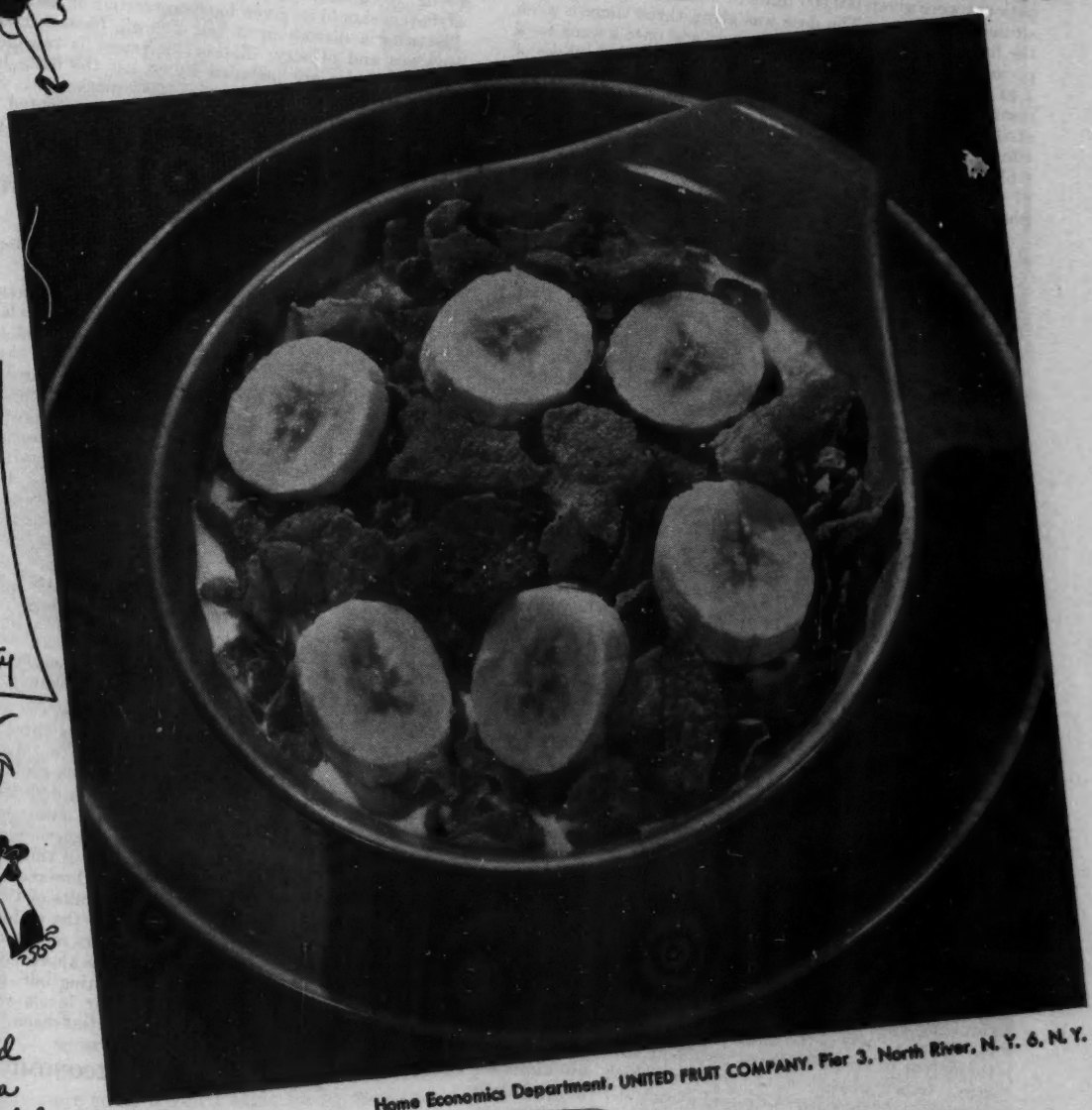
Lipotropic Agents in Liver Disease. Between 1932 and 1942 data were accumulated to indicate that nutritional factors played an important role in pathogenesis, prophylaxis, and treatment of patients with liver damage. Lack of controlled studies has prevented extensive work on the evaluation of methionine and/or choline in human liver disease. This report was specifically written to present information on this subject. Twelve patients were observed. In the group, four had chronic liver damage, one had "idiopathic hypoproteinemia," six had acute hepatitis, and one had mild hemolytic jaundice. During the study, the term, "lipotropic" was interpreted as meaning "hepatic-fat-mobilizing." In chronic acute liver disease, choline produced a definite, positive effect upon the nitrogen balance when patients were on adequate dietary regimes. In chronic active liver disease methionine augumented the anabolic processes when diet was adequate. When methionine was given to patients with extreme protein depletion of non-hepatic origin, there was an anabolic effect. The data collected did not establish any greater effect of methionine than choline on protein balance. Since a high-protein diet was fed to all patients, it might be concluded that the "choline effect" was actually a methionine-sparing effect.

Hypertension. With so many studies appearing on treatment of blood pressure, interest in the reaction of patients to stress has been manifested. Fifty-eight hypertensive patients were picked at random and tested under various environmental situations, ranging from a relaxed, entertaining situation to a highly emotional situation. When most of the patients were confronted with threats and challenges, they developed an attitude of strained aggression and an elevation of blood pressure. Hypertension may represent a protective reaction of mobilization called up by these subjects to deal with day-to-day stress; this becomes a harmful habit and leads to illness if adopted as a way of life.

Liver Extracts in Pernicious Anemia. After fifteen years of intensive work, liver extract has been refined and concentrated for effective parenteral use. More recently vitamin B_{12} has been effectively administered to patients with pernicious anemia, and even after the third day an increased feeling of well-being and vigor has been noted. Neurologic symptoms were alleviated. It is strongly suggested that a deficiency of vitamin B_{12} is "closely related to the natural origin of both the blood and nervous changes." Since vitamin B_{12} has thus far been obtained only in minute quantities, it is available only for experimental purposes and cannot yet be used in treating pernicious anemia.

CHIQUITA BANANA SAYS:

A cheerful breakfast— CORN FLAKES and BANANAS



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4 ounces (½ cup) whole milk
1 teaspoon sugar
1 fully ripe banana
(an average serving)

THE CANADIAN MEDICAL ASSOCIATION JOURNAL

Vol. 59, December, 1948

*Lupus vulgaris and vitamin D_2. E. Gaumond.—p. 522.

Lupus Vulgaris and Vitamin D_2. Lupus vulgaris is the most common form of cutaneous tuberculosis. Nineteen patients were given 600,000 units of vitamin D_2 orally in an alcoholic solution. The dose was given three times a week the first week, twice the second week, and once a week for a period of a month. Dietary adjustment included intake of 1 pt. to 1 qt. of milk daily, restriction of salt intake, and restriction of foods rich in fat. The medication was tolerated well by all patients. A dramatic improvement was effected in three of the nineteen patients. A further report will include the other sixteen patients. The mode of action of the vitamin D_2 is not understood. It may be dephosphorylation.

INDUSTRIAL AND ENGINEERING CHEMISTRY

Vol. 41, January, 1949

*Nutritive value of canned foods. B. B. Sheft, R. M. Griswold, E. Tarlowsky, and E. G. Halliday.—p. 144.

Vitamin Content of Canned Fruits. A previous report has been made on the vitamin content of several commercially canned fruits and fruit juices immediately after canning and after storage for twelve months (at temperatures ranging from 58° to 77°F.) in nine warehouses located throughout the U. S. In this paper is reported the vitamin content of the same canned foods after storage had continued for eighteen and twenty-four months. It was shown that elevated storage temperatures accelerated losses of ascorbic acid and thiamine more than did the extended storage periods. Carotene retentions in tomato juice were excellent throughout the storage period. Niacin retention was excellent in peaches and good in tomatoes and tomato juice stored for two years. Riboflavin was retained very well in tomatoes and tomato juice.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Vol. 139, January 1, 1949

Furtherance of treatment of diabetes mellitus. E. P. Joslin.—p. 1.
*Iodine in nutrition. G. M. Curtis and M. B. Fertman.—p. 28.

Vol. 139, January 8, 1949

*Allergic factors in gout. J. Harkavy.—p. 75.
*Treatment of the fat and the lean. C. F. Gastineau, E. H. Rynearson, and A. K. Irmisch.—p. 86.

Iodine in Nutrition. This paper is another of a series which will appear in book form in the revised edition of the *Handbook of Nutrition*, prepared by the Council on Foods and Nutrition of the American Medical Association. In this overall review of the importance of iodine in nutrition, the incidence of endemic goiter in the various regions throughout the world is discussed. It is pointed out that the iodine in food is the most important factor determining the extent of endemic goiter prevalent throughout a given area. Other phases of the subject which are discussed include: (a) the normal thyroid gland, (b) the pathologic thyroid gland, (c) iodine in the extrathyroid tissues and body fluids, (d) iodine and the prevention of goiter, (e) iodine in the general health of human beings and domestic animals, and (f) the human requirement for iodine.

Gout and Allergy. The concept is presented that allergy may at times be a factor in the development of gout. Three case studies are given in order to elucidate on the problem of (a) whether the symptoms of gout are due essentially to a disturbance of purine metabolism as such, leading to retention of uric acid in the tissues, or (b) whether the various arthritic, cardiovascular, and renal manifestations may be precipitated by allergic reactions in a person handicapped by a hereditary defect in his purine metabolism. It was found that ingestion of various amounts of purine- and fat-containing foods proved to be harmless as long as the sensitizing substances were avoided. These studies demonstrated that allergy to specific foods and pollens played a conspicuous role in the development of gout.

Diet and Body Weight. The dangers of overweight are being recognized more and more. Consequently, more attention should be given to the correction of the condition. Following a discussion of the etiologic factors influencing leanness and obesity, dietary treatment is considered in detail. Tables are included which list the daily food allowance on a 1000-calorie and a 3000-calorie diet. Specific examples of each of these diets are also presented. Some attention is given, too, to psychotherapy and other adjuvants to diet therapy.

THE JOURNAL OF BIOLOGICAL CHEMISTRY

Vol. 176, December, 1948

*Calcification of teeth. I. Composition in relation to blood and diet. A. E. Sobel and A. Hanok.—p. 1103.

Calcification of Teeth. This investigation was undertaken to test the hypothesis "that there is a relationship between the inorganic composition of teeth and the fluid from which the tooth salts precipitate and that the composition of this fluid in turn is related to the blood serum." Groups of young rats were fed three different diets. It was possible to show a relationship between blood serum and the composition of the upper incisor. The composition of the diet was reflected in the blood serum, and composition of the teeth was shown to be related to that of serum. It was also noted that the differences in composition between enamel and dentin might be due to a particular diet rather than to species differentiation.

JOURNAL OF THE CANADIAN DIETETIC ASSOCIATION

Vol. 10, September, 1948

*Types of breakfasts eaten and their effects on the level of the blood sugar in school children. M. E. Galloway and E. C. Robertson.—p. 53.

School Children's Breakfasts. A study was made of the breakfast habits of 494 children attending three schools in a downtown manufacturing area in Toronto. An effort was made to determine the types of breakfasts commonly eaten and to observe the physiologic effects of inadequate or missed breakfasts. Since fatigue, a feeling of faintness, and inability to concentrate are often experienced by those who have eaten little or no food for a period of time, blood sugar determinations were to test whether lowered blood sugar caused these symptoms. Detailed results of the study are given in the article. The majority of the children did not eat adequate breakfasts. The teachers reported that more of the children who ate poor breakfasts appeared fatigued or were more inattentive than those eating fair, good, or excellent breakfasts. The blood sugar levels were not affected by the amount or type of breakfast eaten.

JOURNAL OF HOME ECONOMICS

Vol. 41, January, 1949

*A long-range view of nutrition. H. K. Stiebeling.—p. 1.
What we have found out about frozen foods. E. Sweeney.—p. 25.
Seal and headspace studies in home canning. E. H. Dawson, G. L. Gilpin, E. W. Toepfer, and E. L. Batchelder.—p. 27.

Long-Range View of Nutrition. The question is asked, "What can home economists do to help in the task of raising food production and improving distribution until the diets of all the world's people are brought to a health standard?" In answering the question the author reviews the present day food situation in the U. S. and cites studies which in-

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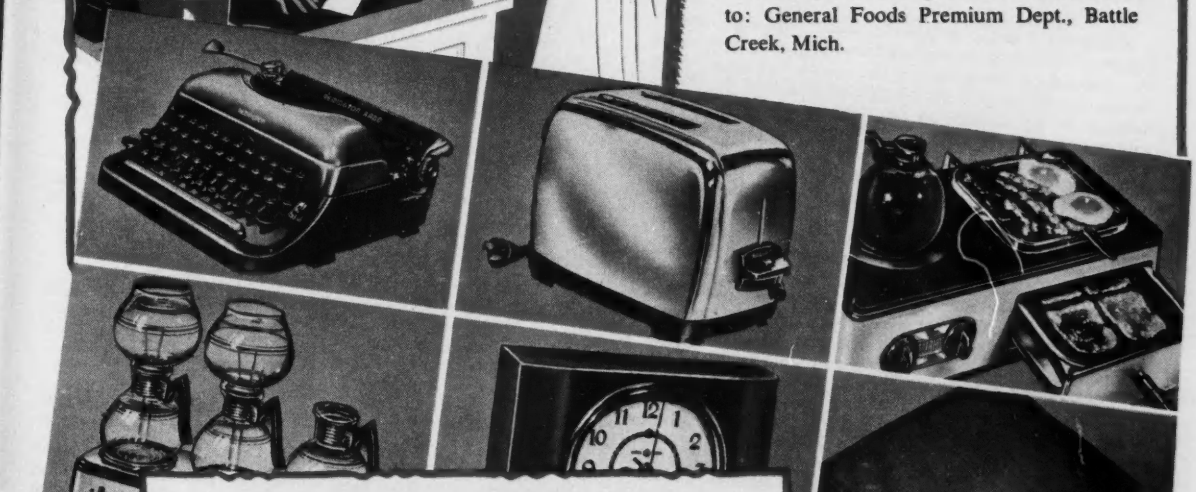

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dicate that more people are eating adequate diets now than ever before. Through the various nutrition studies and research which are now being carried out, a body of significant facts is being accumulated. More people must be induced to apply these facts in the selection of three meals a day. In this country food waste runs high. Much of this waste could be avoided. The special responsibility of the home economist lies in the direction of setting standards for optimal consumption and for the amounts of the various nutritients with which one can "get by." Food plans and market lists for various groups are also helpful. Considerable work along this line has been done by the Bureau of Human Nutrition and Home Economics, and more will be done. Advertising of food products should be greatly improved, too, in this program. Science should speak with one voice in broad, overall terms about food choice and food use.

THE JOURNAL OF NUTRITION

Vol. 36, December, 1948

*Voluntary caloric intake of the growing rat. R. A. Harte, J. J. Travers, and P. Sarich.—p. 667.

Nitrogen balance index and specific dynamic action in rats receiving amino acid mixtures low in isoleucine, methionine, or valine. J. T. Anderson and E. S. Nasset.—p. 703.

*Anemia and edema of chronic choline deficiency in the rat. R. W. Engel. —p. 739.

Voluntary Caloric Intake in Rats. Previous observations and data in the literature have suggested the existence of a constant relationship between the voluntary caloric intake of growing rats fed *ad libitum* and the size they attained. In an attempt to establish this relationship, the voluntary food consumption of rats was studied. During the second week after weaning, the voluntary caloric intake per unit of surface area increased over that observed in the first week; thereafter it decreased. It was found that so long as the animals received rations of essentially constant composition, they ingested just sufficient food to satisfy their caloric requirements per unit of surface area. The data indicated that animals will be more uniform in their growth response if they are selected on the basis of sex and weight at a given age. This is in agreement with the hypothesis which suggests that the growth-curve of an optimally-fed animal is uniquely determined by its weaning weight.

Anemia and Edema of Choline Deficiency. Prolonged feeding of a diet deficient in choline has been shown to produce an anemia as well as a nutritional edema in rats. In this study, hemoglobin determinations were made on rats on a variety of low-choline and/or low-protein diets. Anemia was prevented by dietary supplements of choline chloride or *dl*-methionine. The prolonged feeding of diets low in protein and choline resulted in symptoms of severe nutritional edema in some rats. This condition was not observed in control animals receiving the same diets supplemented with choline. The occurrence of prominent symptoms of nutritional edema with severe ascites in rats fed low-protein diets unsupplemented with choline raises a question as to the possible importance of choline in nutritional edema in the human. (This disease is usually associated with inadequate protein intake.) It is significant that in the present study the edema was consistently accompanied by severe liver damage, a condition which is not uncommon in human nutritional edema. Since the diets did not contain a supplementary source of folic acid, the effectiveness of this factor in the anemia that results from lack of choline was determined. There was no improvement when the animals were given folic acid.

NEW YORK STATE JOURNAL OF MEDICINE

Vol. 48, December 15, 1948

*Nutritional requirements in convalescence. H. Pollack and J. Bookman. —p. 2706.

Nutritional Requirements in Convalescence. A general discussion of protein requirements for the sick and wounded and problems of absorption and digestion and intermediary metabolism of food stuffs is included in this paper as well as three case reports illustrating points made. A plea is made that the hospital dietitian be used to greater advantage than she now is in many institutions. The emphasis is wrongly placed in many hospitals at present; the dietitian is forced to add columns of figures instead of being allowed to emphasize the clinical aspects of her profession. She should spend more time with the patient. She must look at food from the patient's point of view and must be aggressive in her handling of the anorexic patients. Where highly trained dietetic personnel is not available, the duties of the nursing staff must be enlarged to embrace this field.

NUTRITION, DIETETICS, CATERING

Vol. 2, Autumn, 1948

What is malnutrition? T. Moore.—p. 83.

Vol. 2, Winter, 1948

*Practical training for dietitians: syllabus and record.—p. 153.

Practical Training for Dietitians. A short guide for students receiving practical training in dietetics has been prepared by the Education Sub-Committee of the British Dietetic Association. This guide, which is presented, is an outline of the type of experience which the student should receive during the six-month training period. This experience is listed under the following headings: (a) diet kitchen, (b) wards, (c) out-patients, (d) large-scale catering, and (e) teaching experience.

PUBLIC HEALTH REPORTS

Vol. 63, December 10, 1948

Q fever studies in Southern California. V. Natural infection in a dairy cow. W. L. Jellison, R. Ormsbee, M. D. Beck, R. J. Huebner, R. R. Parker, and E. J. Bell.—p. 1611.

*Carbon tetrachloride poisoning. G. A. Abbott and M. J. Miller.—p. 1619.

Vol. 63, December 31, 1948

Q fever studies in Southern California. VIII. Recovery of *Coxiella burneti* from butter made from naturally infected and unpasteurized milk. W. L. Jellison, R. J. Huebner, M. D. Beck, R. R. Parker, and E. J. Bell. —p. 1712.

Vol. 64, January 14, 1949

Q fever studies in Southern California. II. An epidemiological study of 300 rases. M. D. Beck, J. A. Bell, E. W. Shaw, and R. J. Huebner.—p. 41.

Carbon Tetrachloride Poisoning. In ten cases of carbon tetrachloride poisoning reported in this article, it was found unwise to give alcohol, fats, oils, or epinephrine if severe liver and kidney damage were to be avoided. When a patient was able to tolerate food orally, a high-carbohydrate, high-protein, low-fat diet with supplements of choline, B-complex, and vitamin K was prescribed. Alcohol seemed to be a predisposing factor in eight of the ten cases, seven of which gave a history of alcoholic intake. It is felt that the incidence of carbon tetrachloride poisoning is increasing, either due to the fact that it is being more widely used and less precautions are being taken, or else the diagnosis is being made more frequently.

SCIENCE

Vol. 108, December 24, 1948

Effect of dietary factors on early mortality and hemoglobinuria in rats following administration of alloxan. P. György and C. S. Rose.—p. 716.

*Does the U.S.P. vitamin A-deficient diet require supplementation with ascorbic acid? N. B. Guerrant.—p. 724.

Vol. 109, January 14, 1949

Vitamin B_{12} and cell proliferation. E. R. Norris and J. J. Majnarich.—p. 33.

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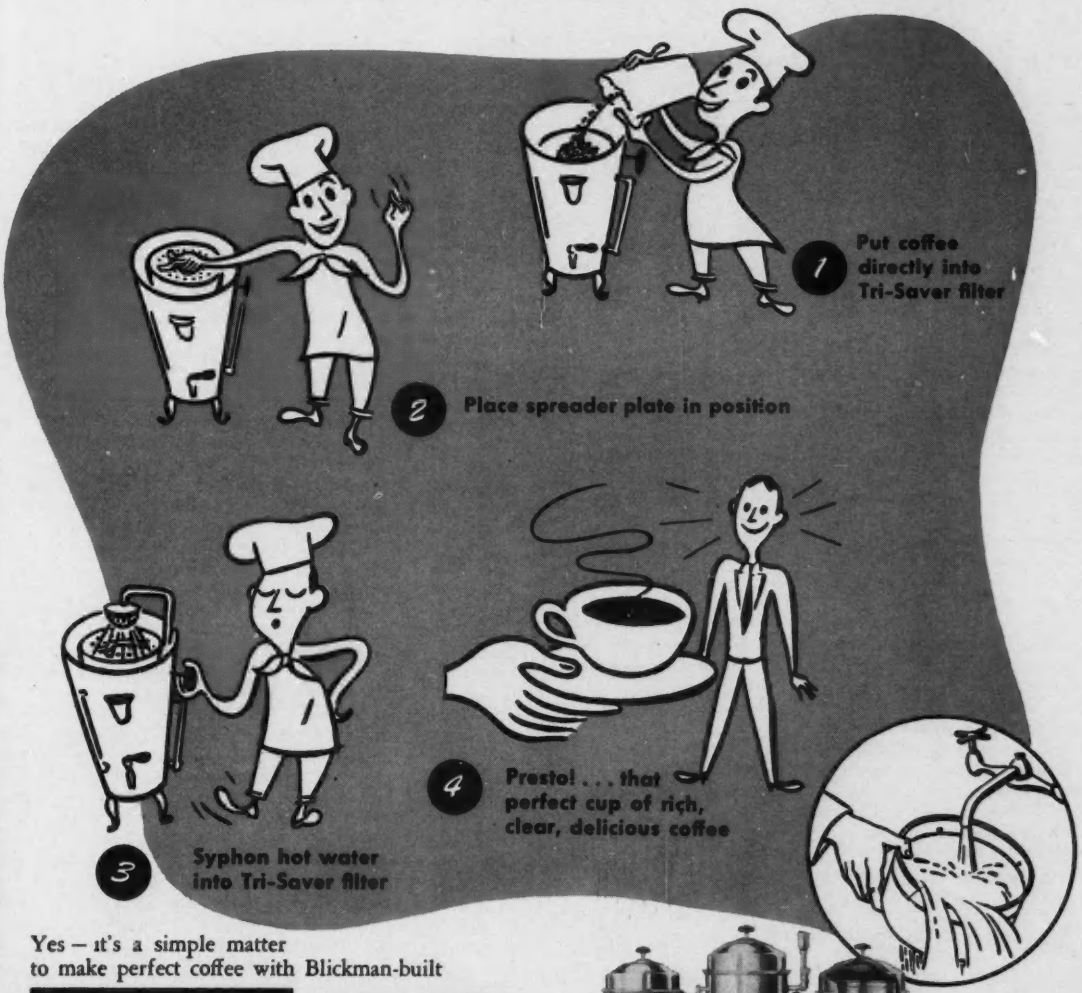
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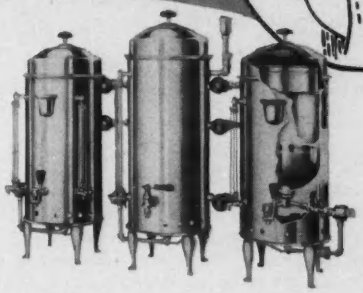

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The U.S.P. Vitamin A-Deficient Diet and Ascorbic Acid. Recent reports seem to indicate a possible relationship between ascorbic acid metabolism and vitamin A utilization. As a result, the question has been raised as to whether the data obtained by means of the usual biologic assay for vitamin A, such as with the official U.S.P. technique, are actual measures of vitamin A potency or whether the data are vitiated by the complications arising from concomitant ascorbic acid deficiency. In order to study the problem, eighty young rats were fed liberal allowances of the U.S.P. vitamin-A-deficient diet. One-half of the rats received the unsupplemented vitamin-A-deficient diet and the other half were given the same diet enriched with ascorbic acid. After several weeks, thirty-two rats from each of the groups were selected and given a vitamin A supplement. The data obtained indicated that there was no improved growth response during either the depletion period or the subsequent vitamin-A-feeding period as a result of supplementing the basal diet with ascorbic acid.

AMERICAN RESTAURANT MAGAZINE

Vol. 32, December, 1948

*Let's cook well to win customers. J. A. Cline.—p. 36.
*Your equipment requires care. T. Trail.—p. 40.
Good food control systems. E. E. Wunderly.—p. 44.
*Employees help write advertisements. T. Knight.—p. 50.
*20 ways to get publicity.—p. 52.
Don't hire hands—hire helpful employees.—p. 92.

Training Program for Cooks. A good training program for cooks will raise the standards of food service, cut down food costs, and insure a trained employee, capable of taking over in the absence of the regular cook. Although mention is made of methods to use in training, this article is concerned chiefly with *what to teach*, emphasizing the basic training in modern methods of restaurant cooking. A suggested training outline is developed here and includes points under each of the following: (a) kitchen plans and organization, (b) use and care of equipment, (c) sanitation and safety, (d) modern methods of restaurant cooking at the range, in the pantry, and in the bake shop (e) food buying, (f) food conservation, (g) kitchen supervision, (h) menu planning, and (i) food cost control.

Equipment Care. Regular and careful cleaning, lubrication, inspection, required adjustments, and prompt repairs will make equipment operate efficiently, last longer, and give greater returns on investment. A program for equipment care for the modern food service unit is outlined.

Ideas for Advertising. Some excellent suggestions for advertising a restaurant can be obtained by gaining the cooperation of the employees. After suggestions have been made, employee round table discussions will improve those suggestions of doubtful merit and develop new ideas. Several concrete ideas for advertising purposes are described.

Publicity. Hundreds of dollars of free publicity in the local newspapers can be gained by organizations knowing exactly what sort of news items the editors of the papers want. A publicity check list is presented, outlining concrete, tried, and true methods by which to keep the name of one's organization in the news columns of the local newspapers.

BAKERS' HELPER

Vol. 90, November 27, 1948

*What makes delivery costs too high? E. W. Fair.—p. 32.
*Soy makes fine cookies. W. E. Broeg.—p. 59.

Vol. 90, December 11, 1948

How compressed air power aids one modern baker.—p. 64.

Vol. 90, December 25, 1948

*Give your cakes a new look. F. P. Graw.—p. 57.
*Variations in summer egg white quality. O. J. Kahlenberg.—p. 60.

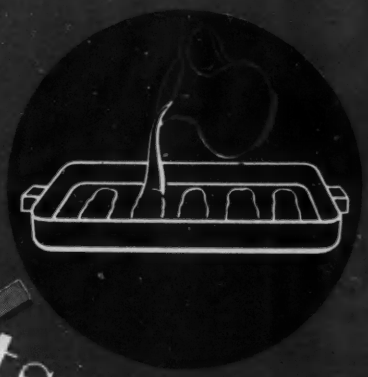
High Delivery Costs. A number of points are included in this article which might be applied to delivery of food to various areas in the hospital by means of food trucks. High delivery costs may be cut by having an accurate, detailed accounting system showing items contributing to excessive costs. Regular surveys of route operations with thorough analysis should be made to determine if they are providing maximum coverage with minimum stops and long runs between stops. Good routing calls for study of business flow, physical nature of prospective route areas, and the type and character of truck drivers. Checks should be made every six months with adjustments according to surveys. Lack of organization, use of wrong type of equipment, too much operation with small loads, inattention to discipline of drivers, too much mixed load handling, bad traffic conditions, and accidents are among the causes of high delivery costs which may be reduced if recognized.

Soy Cookies. Easy, quick recipes for "stock-build" type soy doughs are given from which cookies for any occasion may be made. The soy butter cookie base may be used for typical ice box cookies and for rich, short-bread items. These doughs may be made in advance and refrigerated. Recipes include English rock, butter, chocolate chip, old-fashioned fruit, sugar, coconut, and date-nut cookies, also chocolate squares or bars. Two entirely different soy brownies may be produced depending on the mixing procedure. By adding melted fat and chocolate to beaten eggs and sugar before the flour is added, a more chewy brownie is produced than by creaming sugar and shortening, adding the eggs, and then adding chocolate and flour.

"New Look" Cakes. The war period is over, so it is a good time for us to get out the pencils and the formula books, take a good look at our products and decide whether they don't need a new look. Products recommended include: a good creamy, pure cane fondant to improve quality of icings; a formula for butterscotch custard filling for spice cake; a chocolate-marshmallow roll with a butterscotch marshmallow filling; jelly roll sponge cake with a chocolate cream filling instead of the traditional jelly; and a cake recipe which is finished when baked, no icing needed. Additional recipes are given for: honey apple cake; butterscotch honey topping; marshmallow filling; butterscotch marshmallow formula; and the chocolate cream filling.

Summer Egg White Quality. There is considerable disagreement about the value of using spring or summer egg whites in angel food cake mixes. The National Egg Products Association Research Laboratory has presented the results of its findings. The results showed that there were no significant differences in the summer whites with respect to whip and drip tests, p_H values, and bacterial counts. The performance of the summer whites was checked in the preparation of angel cakes under standard conditions. There was no difficulty in separating the yolks from the whites, but the whites were thicker in consistency the sooner they were cooled. The longer the eggs were held at a high temperature the more watery the whites remained before and after whipping. The longer the cooling period of summer eggs was prolonged, the greater was the shrinkage and the coarser the texture and grain of the angel food cakes from them. There was no noticeable difference in the flavor of the eggs tested. The study, although preliminary and not complete, indicates that it is possible to make good angel food cakes from summer eggs if they are properly cared for with reference to time and temperature factors, but that eggs cooled immediately after collecting make better angel food cakes.

Quintuplets



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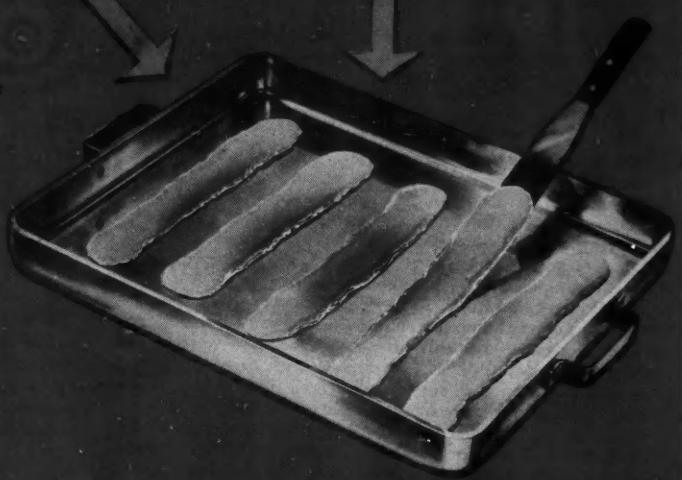

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BUILDINGS

Vol. 48, October, 1948

A quick check list for efficient lighting maintenance.—p. 38.

Vol. 48, November, 1948

In case of fire would your employees know what to do and how to do it? C. A. March.—p. 30.

Vol. 48, December, 1948

*Tell your maintenance men: handle fluorescent tubes carefully.—p. 28.
Analyzing cleaning preparations. C. A. March.—p. 38.

Fluorescent Tubes Dangerous. Beryllium is much more toxic than was first thought. If this powder comes in contact with any open lesions of the skin, it enters the tissues and begins to cause a tumor-like growth and degeneration. All maintenance men, janitors, and salvage workers should be made aware of the hazards of breaking fluorescent tubes. Any one who happens to break a fluorescent tube should receive medical attention immediately. Recommendations are made to cover two general situations: first, when breaking small numbers of fluorescent lamps daily, break all tubes out-of-doors in the waste disposal area or in a waste container, taking precautions not to breathe any dust and vapor given off; when there is a large number of lamps to be broken, a respirator approved by the U. S. Bureau of Mines for toxic dust should be supplied the operator. The public should not be exposed to the powders. Broken lamps should not be disposed of in an incinerator, but either be thrown into water or in a dump where they are not likely to be disturbed. Mercury measurements should be made where there is frequent or continuous exposure to these lamps, and protection should be provided for the operator if data show the mercury levels to be high.

ICE CREAM TRADE JOURNAL

Vol. 44, October, 1948

*Flavor materials. C. Koerver.—p. 84.
Overrun and dipping yields. H. R. Bierman and W. D. Bromley.—p. 96

Vol. 44, November, 1948

*Slide rule to greater dealer profits. T. E. Heidenreich, Jr.—p. 32.

Vol. 44, December, 1948

Manufacture, use, and storage of dehydrated sweetened condensed skim milk. A. T. Mussett and W. H. Martin.—p. 54.

Flavor Materials in Ice Cream. While there are between 300 to 400 flavors used for ice cream, extract-flavored and emulsion-flavored ice creams constitute the bulk of production. Described here are the various flavors and the properties which make them suitable or unsuitable for use in ice cream. The flavors considered include: vanilla, coffee, lemon, chocolate, and the various fruits.

Ice Cream Slide Rule. A new device has been developed for figuring costs and proper margin practices in the handling of bulk ice cream. Basically, the device is a slide rule which can be used to determine the exact cost of any fountain item. All values on this slide rule were derived from actual field tests. At a glance the cost per ounce of ice cream and the cost per scoop of any size in terms of cost in dipped pints and quarts can be determined. The balance of the rule consists of charts showing the cost of two types of cones and three sizes of containers for take-out sales. In all instances, there are six or more wholesale ingredient prices given so that varying market conditions can be met.

THE NATION'S SCHOOLS

Vol. 42, October, 1948

*Homemaking and lunches team up. A. McConnell and W. W. Frampton.—p. 56.
A different approach to ventilation. P. W. Seagers.—p. 60.

Vol. 42, November, 1948

*Summer workshops from the inside. K. C. Wisely.—p. 56.

Vol. 42, December, 1948

How to care for wood floors. R. Hicks.—p. 60.
*Eight lunchrooms and how they grew. J. H. Knox.—p. 64.

Homemaking and Lunches. The homemaking and school lunch program in Knox, Pennsylvania, is planned with school and community interests in mind. Homemaking classes are required for all girls in Grades 7, 8, 9, and 10. Eleventh and twelfth grade classes are elective to boys and girls. The seventh grade course is devoted to orientation and guidance, with emphasis on a preview of home and family living. In Grade 8 the girls are given practical experience in homemaking. Better nutrition, general preparation, and food buying are the goals of the work in Grade 9. Individual intersts and aptitudes are further developed through progressive assignments in practical handwork. The family in its relationships within its own circle and within the larger community circle is treated during the sophomore year of high school. Junior and senior boys and girls may take an advanced foods and laboratory course with emphasis on efficiency, cooperation, and personality development. Child care is learned in a practical way; the students are responsible for training younger children at lunch. Appearance, good grooming, personality development, and etiquette are also covered. Theory acquired in classroom discussion is applied in everyday practice. The pupils also receive experience in quantity cookery through their help in the school lunch program. Holiday seasons are used as an incentive for many projects. This training has opened a number of avenues for employment or employment possibilities. The school's ultimate goal is to train better homemakers.

School Lunch Workshops. Five of the thirteen states in the Northeast area held school lunch workshops on college campuses last summer for approximately one week. The aims of these workshops varied with the states, but they included raising food standards; bringing students face to face with actual problems of planning and preparation of school lunches; and promotion of physical, mental, and social development of the school child. To achieve these aims, lectures, demonstrations, dramatizations, visual aids, group discussions, and individual conferences were used.

Community Recognizes School Lunch Need. The beginning of the school lunch program in Salisbury, North Carolina, came from the efforts of interested parents who served soup and sandwiches to the children in unused classrooms. The war brought demands for service beyond the capacity of facilities available. In 1946, the school system began participation in the North Carolina state school lunch program. Institutes and workshops conducted by the state staff were a great aid in the training of the local staff and in the maintenance of morale. Devices which have assisted in increasing interest and student participation in the school lunch program are: menus planned by pupils and teachers, classroom discussion of foods and lunchroom services, displays of pupils' art work in the lunchrooms, following suggestions of pupils and teachers whenever possible, and pupil assistance in lunchroom management and housekeeping. Details of the program are described.

PERSONNEL JOURNAL

Vol. 27, December, 1948

*Qualities essential for supervisors. W. J. Eisenberg.—p. 251.
*Effective use of discipline. F. C. Smith.—p. 258.

Supervisory Qualities. A study was undertaken by the training committee of the Federal Council of Personnel Administration in Philadelphia to determine how much agreement exists regarding the qualities required in supervision. Questionnaires for rating the most essential quali-

MEAT...

In the Rational Weight Reduction Program

One dictum is universally recognized in the planning of reducing diets: the basic requirements of good nutrition remain unaltered, and adequate amounts of high-quality protein are the cardinal factor in the successful dietary management of overweight.

Protein allowance in such a program is stated to be not less than 1.5 to 1.7 Gm. per Kg. of ideal body weight.[1] A further advantage of the diet high in protein and low in fat and carbohydrate is its greater simplicity; the tedious calculation of calories may be omitted without impairing the efficacy of the program.[2]

It is therefore recommended that lean meat be given a dominant role in reducing diets.[1]

The protein content of meat is notably high. Regardless of cut or kind, meat provides biologically complete protein able to satisfy the multiple amino acid needs of the body.

Lean meat, particularly, is of excellent digestibility. Its outstanding satiety value assures patient cooperation, a vital factor in the success of any weight reducing program.

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[1] McLester, J. S.: Nutrition and Diet in Health and Disease, ed. 4, Philadelphia and London, W. B. Saunders Company, 1943.

[2] Kunde, M. M.: The Role of Hormones in the Treatment of Obesity, Ann. Int. Med. 28:971 (May) 1948.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute

Main Office, Chicago...Members Throughout the United States

ties were sent to 874 individuals in fifty-two organizations of varied sizes. For the purpose of the study, the term "supervisors" meant persons responsible for the activities of two or more employees; "first-line supervisors" were persons responsible directly for workers engaged in production, clerical operations, or transportation of materials; "coordinating supervisors" were persons directing and reviewing the activities of groups of first-line supervisors. High correlations as to the essential qualifications were found between unselected and selected groups of supervisors, male and female supervisors, federal and private supervisors, and between first-line and coordinating supervisors in evaluating the requirements of first-line supervision.

Discipline. The June issue of *Personnel Journal* carried an article which suggested that lenient management encourages poor conduct on the part of the employees. In this paper the opposite view is taken. Case studies are cited which emphasize the need for more understanding in some situations in which discipline is used supposedly to cure the problem. There is a place for constructive discipline—the kind needed when employees are confused and become rebellious because of a real or supposed weakness on the part of management.

RESTAURANT MANAGEMENT

Vol. 63, November, 1948

A ten-point recipe for restaurant advertising. B. Bonsib.—p. 33.
•Fundamental figures behind waitress uniform preferences. C. L. Swital.—p. 42.
A health inspector can be your best friend—if you let him. J. L. Gluth.—p. 54.

Vol. 63, December, 1948

Unusual ways in which left-over meats may be utilized. A. Easton.—p. 42.
•Why customers quit patronizing dining rooms. N. H. Comish.—p. 46.
Keeping winter floors clean and skid-proof. D. E. Smalley.—p. 48.

Waitress' Uniforms. The wrong kind of working uniform for women can have a direct effect on fatigue, nervousness, and a generally disinterested attitude on the job. Through a recent survey it was found that the average waitress is a slightly bigger woman than the average adult American female. She, therefore, prefers the full, roomy styles of uniforms with plenty of fullness and shoulder room. The popular uniform is the wrap-around or shirtmaker type, with a flat collar, belt width of 1¼ to 2 in., and pockets located near the side about hip height. The length of the uniform should be to 3 or 4 in. below the knee; the uniform should have an unstarched but linenized look. Cool colors such as turquoise, light greens, and tans are preferred. Light weight shoes with low or walking heels and flesh-colored hose are most desirable.

Why Patronage Drops. A survey made in Oregon shows reasons given by patrons for changing eating places. Twenty-two per cent of the patrons in this study gave poor quality food as the reason, and 20 per cent blamed high prices. Other reasons given included slow service, indifferent service personnel, poor atmosphere and appearance, haughtiness of waitresses, errors and short changing, wrong management policies, misrepresentation of foods, attempted substitution of foods, argumentative attitude, ignorance of foods and menu, tricky menu pricing, reluctance to exchange foods, and poor advertising. The percentage of people who indicated they had changed eating places and the reasons given for changing restaurants showed that there is a need for greatly improved employee training programs and hiring policies.

New Appointments, Veterans Administration

The following hospital appointments of dietitians (not previously announced) have been made by the Veterans Administration:

Name	Position	Location
	Branch No. 2	
Sylvia G. Kaput	Staff Dietitian	Bronx, N. Y.
	Branch No. 3	
Elizabeth E. McConnell	Staff Dietitian	Butler, Pa.
Willa A. Reed	Staff Dietitian	Coatesville, Pa.
	Branch No. 6	
Helen Shay	Head Dietitian	Dayton, Ohio
	Branch No. 7	
Avonelle T. Branson	Staff Dietitian	Indianapolis, Ind.
Lawnzina Prince Duncan	Staff Dietitian	Downey, Ill.
Joan M. Lechtenberg	Staff Dietitian	Indianapolis, Ind.
Eunice G. Morats	Staff Dietitian	Danville, Ill.
June Delores Tanck	Staff Dietitian	Downey, Ill.
Maxine J. Wanuka	Head Dietitian	Downey, Ill.
	Branch No. 10	
Mildred Haynes	Staff Dietitian	Temple, Tex.
Evelyn E. Heints	Staff Dietitian	McKinney, Tex.
Betty Ann Karon	Staff Dietitian	New Orleans, La.
	Branch No. 11	
Mathilde W. Grunow	Clinic Dietitian	Portland, Ore.
Stanley R. Watson	Staff Dietitian	American Lake, Wash.
	Branch No. 12	
Velma Dalton	Staff Dietitian	Livermore, Calif.
Huela Irion	Staff Dietitian	Whipple, Ariz.
Carol M. Stevenson	Staff Dietitian	Los Angeles, Calif.
	Branch No. 13	
Margaret Hall	Staff Dietitian	Grand Junction, Colo.

Good Send-off for another special diet patient!

73 tempting, monotony-escaping dishes— and they're all in Gerber's Special Diet Recipe Booklet! Planned by qualified nutritionists. Everything from appetizers through desserts are based mostly on . . .

The wide variety of Gerber's Strained Foods. All are low in crude fiber. Strained *and* Junior Soups, Meat-combinations, Fruits, Vegetables, Desserts are all processed to retain essential vitamins and minerals to a high degree.

New! Gerber's Meats

are ARMOUR Quality BEEF, VEAL, LIVER!

Now . . . more mealtime interest and variety for your special diet patients. Delicious meats . . . strained or uniformly particulated, and all ready to serve. They're high in proteins, low in fat. Low in price, too!

FREE! For use with Patients
Special Diet Recipe Books
Special Diet Instruction Folders
Professional Reference Cards
Meat Analyses
Write to Gerber's, Dept. 233-9
Fremont, Mich.

Gerber's
FREMONT, MICH. OAKLAND, CAL.

3 CEREALS • 20 STRAINED FOODS • 15 JUNIOR FOODS
3 STRAINED MEATS • 3 JUNIOR MEATS

News Notes

Honors to Dietitians. In January, *Ada B. Lothe*, Supervising Dietitian, Milwaukee County Institutions, Milwaukee, Wisconsin, retired after more than twenty-seven years of service. Miss Lothe, as director of the approved dietetic internship at that organization and as the author of a widely used cook book, is well known in the profession of dietetics. At the time of her retirement, a feature article chronicling her career and achievements was published in the Milwaukee *Journal*.

Another prominent member of A.D.A., *Lute Troutt*, Past-President of A.D.A. and Head Dietitian, Indiana University Medical Center, Indianapolis, in November was given special recognition at a tea in her honor. The occasion was a celebration of her twenty-five years of service, and to commemorate this anniversary she was given a beautiful watch.

Dietetic Interns Graduate. On December 21, in Portland, Oregon, a graduation dinner in honor of Shirley May Moreland, Seattle College, was held. Miss Moreland has completed her dietetic internship at the *University of Oregon Medical School Hospitals and Clinics*.

At the *Johns Hopkins Hospital*, Baltimore, six dietetic interns completed their training on January 10. They are: Barbara Penyak, Ohio State University; Mary Breed, University of Kansas; Darthy Looney, Virginia Polytechnic Institute; Kathleen Boyce, Winthrop College; Mary Jukich, University of Minnesota; and Helen Speierman, Utah State Agricultural College.

On January 26, graduation exercises for five dietetic interns were held at the *Cook County School of Nursing*, Chicago. Preceding the program was a dinner in honor of the graduates. For the program itself, a theme carrying out various phases of a television was used. The graduates are: Marie deGreef, University of Stellenbosch, Union of South Africa; Eleanor Jenkins, Kansas State College; Irene K. Ptak, Illinois Institute of Technology; Noreen Grady Roche, Mundelein College; and Jeweldeen Timmons, Florida State University.

Errata. In the December, 1948 issue of the JOURNAL, on page 1097, the title of the index for the JOURNAL should have read "Index to Volume 24." A limited number of gummed stickers with the correct heading have been printed for those wishing to make this correction.

Kathleen Jeffs. The December, 1948 issue of the *Journal of the Canadian Dietetic Association* carried an obituary editorial about Kathleen L. Jeffs, who passed away in October in Toronto. Miss Jeffs at the time of her death was Head Dietitian for the T. Eaton Company, Montreal, and had been elected President of the Canadian Dietetic Association for the current year. During the war, Miss Jeffs did outstanding work when she was in charge of the Messing Service of the Royal Canadian Air Force. She ranked as a Wing Officer and was also Deputy Director of the R.C.A.F. For her distinguished service, she was made a Member of the Order of the British Empire by the King. Shortly before her death she celebrated twenty-five years of service with T. Eaton Company, at which time she was presented with an engraved silver tray. Her death was a great loss to the dietetic profession in Canada, and in the U. S., as well.

New A.H.A. Publications. The American Hospital Association has released the first two sections of a *Manual on Hospital Personnel Administration*. The first section is titled "The Development of Sound Personnel Practices in Hospitals," and presents the basic content for establishing a personnel program and for expanding, revising, and redefining existing programs. Its price is $1.50. The second section consists of a "Bibliography of Reference Material on Personnel Administration," which sells for $1. Six additional sections will be released later. They will cover: conference techniques, written communications, the development of a personnel department, forms, jobs analysis and job evaluation, and training.

Pennsylvania State College. Effective January 1, the Department of Home Economics of the Pennsylvania State College became the School of Home Economics. To commemorate this reorganization, a convocation in recognition of the new school was held on February 8, and on the following two days there was a program of demonstrations, talks, and exhibits.

Lithium Chloride Poisoning. On February 18, the Food and Drug Administration issued a warning that salt-substitutes containing lithium chloride are poisonous. At the request of this agency, the following products which have been used by persons on salt-free diets have been recalled from the market: Wes-Sal, Foodsal, and Salti-Salt. Three deaths and several injuries believed to be attributable to the use of lithium chloride have been reported. The early symptoms from lithium chloride poisoning are similar to those of heart and kidney disease which require salt-free diets, and for that reason, it is feared that other cases of poisonings may have passed unrecognized. The symptoms include: drowsiness, weakness, loss of appetite, nausea, tremors of the extremities, blurring of vision, and coma. Medical reports show that people who have suffered mild symptoms have recovered when they discontinued the use of lithium. Ordinary table salt, sodium chloride, is not under suspicion.

U.S.P.H.S. Florida Meeting on Diabetes. A seminar on diabetes for the medical profession in the Southeast will be held March 28 and 29 in Jacksonville, Florida. Co-sponsored by the Duval County Diabetes Association and the U. S. Public Health Service, it will feature as principal speakers, Dr. Charles Best, co-discoverer of insulin; Dr. Elliott P. Joslin, Boston; Dr. Joseph Barach, Pittsburgh; and Dr. John Reed, George Washington University. Nutritionists and dietitians are invited to attend a special meeting on the afternoon of March 28 at the George Washington Hotel, Jacksonville, to hear Drs. Best and Joslin.

Institute on Dietetics in West. An American Hospital Association Institute on Dietetics to be held in the West is scheduled for June 20 to 27 at Los Angeles. The first such institute for 1949 will be held this month in Biloxi, Mississippi, March 14 to 18.

Syracuse Summer Institute. For the third year, Syracuse University and the New York State Department of Health will sponsor a Community Nutrition Institute, July 5 to 16. It will be planned to meet the needs of community nutritionists, clinic dietitians, public health nurses, case workers, group workers, nutrition instructors, home economics teachers, health teachers, and health educators.

Distribution of Books Between Countries. The American Booksellers Association has been appointed to administer the UNESCO book coupon program in this country. Under the coupon program, individuals in war-devastated countries use their own national currencies to buy UNESCO book coupons. These are then sent, with a purchase order for any books or periodicals desired, to the publisher or his agent in another country. The coupons are redeemable by UNESCO in the currency of the publisher's country. Here in the U. S., the

Compare *Savory* Toaster 4 Ways

Find out for yourself why SAVORY Toaster is such a good buy. Compare SAVORY for quality, quantity and cost of toast production.

Savory toaster gives you these features:

QUALITY TOAST — Crunchy, golden brown with soft, tender centers. SAVORY is the *only* toaster which travels bread continuously on a conveyor through three toasting zones.

20 SECOND ORDERS— SAVORY'S a speed artist, sure enough! Largest capacity model keeps 4 slices dropping every 20 seconds, 12 slices per minute, 720 an hour when you need it.

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COSTS PENNIES PER HOUR— SAVORY operates for only a few pennies per hour at most—for as little as ¾c in many localities. Requires only two and three-quarters square feet of counter space.

THE 3 SAVORY STEPS TO PERFECT TOAST
STEP 1
MOIST HEAT FOR SOFT CENTERS
STEP 2
TOASTING HEAT FOR NUT-SWEET FLAVOR
STEP 3
FINISHING HEAT FOR GOLDEN-BROWN COLOR

Savory Keeps Toast Orders Moving
Always room for toasting
Always toast for serving

PROMPT DELIVERY NOW

New Model SAVORY Toasters in 6 to 12 slice per minute capacities. Also bread, bun or sandwich models. Improved, tested design. New, lustrous stainless steel construction.

PRICES SAME AS PRE-WAR MODELS

See your Food Service Equipment Dealer for SAVORY Bread, Bun or Sandwich Toasters—or write us direct for full information.

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American Booksellers Association will transmit orders and arrange for redemption of the UNESCO coupons.

Occupational Data on Nursing. The American Nurses' Association has recently published a new booklet *1948 Facts About Nursing*, which gives vital statistics concerning the profession of nursing. It includes data on distribution of professional nurses in the U. S., counseling and placement, employment practices, and auxiliary nursing service. As an occupational analysis, the data should be valuable to all counselors, as well as to dietitians working in our vocational guidance program, since the information deals with an allied profession. Copies may be obtained at 35 cents from the American Nurses' Association.

Revised Food Charts. A revised set of "Food Value Charts" has been issued by the Philadelphia Child Health Society, 7th and Delancey Streets, Philadelphia 6. These charts present in bargraph form nutritional values of foods, including cooked foods. On the back of each card is given the contribution of various foods to the Recommended Dietary Allowances. A set of twelve cards costs $1.

Booklet on Food in Tuberculosis. The Bureau of Tuberculosis Control and Nutrition Division of the Michigan Department of Health has prepared a booklet titled "Food and Tuberculosis." Planned to serve as a guide for buying foods and planning meals for tuberculosis patients, it deals with marketing and includes tables of weekly quantities of foods. A normal diet market order is given, as well as weekly amounts of foods and suggested menus for the following types of tuberculosis patients: men, women, adolescent boys, adolescent girls, children, and infants. Single copies out of state are 25 cents, and may be ordered from the Michigan Tuberculosis Association, 403 Seymour Avenue, Lansing 14.

Government Publication. *Helping Families Plan Food Budgets* is the title of Miscellaneous Publication No. 662 of the Bureau of Human Nutrition and Home Economics, U.S.D.A. Written for social welfare, extension workers, other professional counselors and teachers, the booklet gives methods of developing food plans not shown in the popular-style bulletins issued by this agency. It may be obtained for 15 cents per copy from the Superintendent of Documents.

The Bureau of Labor Standards of the Department of Labor has issued a new booklet, *Federal Labor Laws and Agencies*. It is a quick reference guide giving the major provisions and purposes of all important federal labor laws and agencies serving workers and employers. It was especially planned for use by shop stewards, supervisors, and other representatives of labor and management who are responsible for making good industrial relations. This is publication No. 100. Limited quantities are available as long as the supply lasts from the Bureau of Labor Standards. Larger quantities may be ordered for 25 cents a copy from the Superintendent of Documents.

Food and Container Institute Publications. *Meat Products* is the title of a recently published report by the Quartermaster Food and Container Institute for the Armed Forces. Its chapters include the place of meat in the soldier's diet, frozen meats, cured and smoked meats, and canned meats.

A second new booklet from this agency is *Flavor and Acceptability of Monosodium Glutamate*, in which are published the proceedings of a symposium on this topic held in Chicago in March, 1948. The booklet includes papers on the effect of monosodium glutamate on food flavor, use of monosodium glutamate in sea food products, the relation of glutamate to the browning reaction, and other papers dealing with various phases of research already done on this product.

Copies of both publications may be obtained by writing the Food and Container Institute, 1849 West Pershing Road, Chicago 9.

New Canadian Publication. The Canadian Council on Nutrition has begun publication of an official organ, *Canadian Bulletin on Nutrition*. In Volume 1, Number 1, issued in September, 1948, it is stated: "This bulletin is planned for occasional publication as a reference book of recent developments in nutrition, particularly as they apply to Canada. It is not the primary purpose of this bulletin to publish scientific reports or original research." The first issue is devoted primarily to describing the nutrition programs of the various Canadian provinces, as well as other organizations, such as the Red Cross and the Visiting Homemakers Association.

Plentiful Foods. The Production and Marketing Administration of the Department of Agriculture expects the following foods to be plentiful during March:

Fresh produce and fruits

Cabbage	Oranges
Carrots	Potatoes, Irish
Onions	Spinach

Miscellaneous foods

Beans, dried	Honey
Broilers and friers (east of the Mississippi)	Oat products
	Oranges, processed
Corn, canned	Peanut butter
Corn products	Pears, winter
Dairy products, processed	Peas, canned (lower grades)
	Peas, dried
Eggs	Prunes, dried
Grapefruit, processed	Raisins, dried

The Department notes that broilers and friers, in areas east of the Mississippi River, should be given special stress during March.

Family Expenditures for Food. A survey conducted by the Bureau of Human Nutrition and Home Economics last winter showed that families in the Minneapolis-St. Paul area spent an average of 30 per cent of their income for food, while in Birmingham, Alabama, the percentage was 37. Actual dollar purchases in Minneapolis-St. Paul were more—an average of $24.40 per week per family, or $6.89 per person—than in Birmingham ($21.67 per week per family), but average incomes in Birmingham were smaller, and in Minneapolis-St. Paul, the average size of the family was slightly larger. These figures include all food eaten at home or away from home, but do not include food canned from home gardens or received as wages or gifts.

Consumption of meat, poultry, and fish, and of eggs was about the same in the two city areas compared, but in Minneapolis-St. Paul, families used one-third more milk or its equivalent in cheese, ice cream, and cream; a third more citrus fruits; and 50 per cent more canned fruits and vegetables. On the other hand, they ate slightly less vegetables; a third less flour, bread, and other cereal foods; a little less sugar; and one-fourth less fats than Birmingham families. A breakdown of the figures on fat consumption in Minneapolis-St. Paul showed that in that area almost four times as much butter was used in Birmingham, but only two-fifths as much margarine, and one-fourth as much lard.

Potato Consumption. It is rather generally known that potato consumption has been decreasing in the U. S. Now the Bureau of Agricultural Economics of the U.S.D.A. gives figures. In 1910, the average per capita consumption of potatoes was 195 lb.; in 1948, it was 118 lb. However, the total consumption of potatoes has risen because of the increase in population. The average yearly consumption of potatoes during 1940–47

Army Announcements Concerning Personnel

The War Department has released the following official list of names of Medical Department Dietitians (not previously announced) who have been separated from service:

Captains

Ruth E. Anderson, R-264, 1332 S. Hope St., Los Angeles 15, Calif.
Margaret C. O'Connor, R-707, 987 Mossic St., Jessup, Pa.
Dorothy L. Wiltamuth, R-632, Alban Towers, Washington, D. C.

First Lieutenants

Helen Ruth Barefoot, R-2504, McKees Rock, Pa.
Muriel C. Lawson, R-1129, 717 E. Maine St., Benton, Ill.

The differences between them . . . the quality control in their processing . . . their origin . . . their uses.

Evaporated and Condensed Milk . . . Some Important Differences

Q. What are the major differences between Evaporated and Condensed Milk?

A. Canned Condensed Milk is sweetened. Evaporated Milk contains no added sugar. More water is removed from Condensed Milk than from Evaporated.

Q. How do the analyses of Evaporated and Condensed Milk compare?

A.

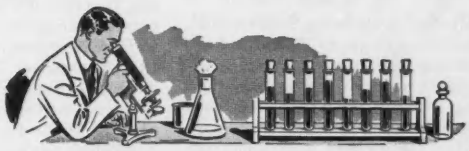
EVAPORATED		CONDENSED
7.9%	BUTTERFAT	8.50%
6.9%	PROTEIN	7.77%
9.7%	LACTOSE	10.97%
1.6%	MINERAL ASH	1.76%
26.1%	TOTAL MILK SOLIDS (including butterfat)	29.00%
73.9%	MOISTURE	27.00%
0%	SUCROSE	44%
43.5	CALORIES (per fluid ounce)	125.4
400 un.	ADDED VITAMIN D (per pt.) (U.S.P. units)	None

Q. Why is the "quality control" of Evaporated Milk so important?

A. Since Evaporated Milk is used so often in the making of carefully prepared infant feeding formulas, it is imperative that it should be processed according to a rigidly controlled standard. That is why Borden's takes so many "quality control" steps to insure the sterility, flavor, color and *rigid uniformity* of all Borden's Evaporated Milk.

Q. Have quality standards been established for Condensed Milk as well?

A. The Borden Company established the first rules of quality for condensed milk and also set up the first standards of uniformity. Nowadays Borden is not content merely to meet government standards. All of Borden's Condensed Milk must be of uniformly high, *non-varying* excellence.



Q. How is the name Borden related to the development of canned milk?

A. In 1857, Gail Borden, founder of The Borden Company, invented condensed milk, and thus started the entire canned milk industry. Previously there had been no way of preserving milk.

Q. How is Condensed Milk used in the home?

A. Condensed Milk is not advertised or promoted for infant feeding, although it is sometimes prescribed. Its major home uses are in cooking and as combined cream-and-sugar for coffee and other beverages. Sweetened Condensed Milk makes possible a special method of quick cooking by which dozens of delicious and nutritious desserts and cookies may be prepared. (A helpful recipe book is yours for the asking. Address: The Borden Company, Dept. AD, P. O. Box 175, New York 8, N. Y.)

BETTER NUTRITION THROUGH MILK RESEARCH AND QUALITY CONTROL

The Borden Company
350 Madison Ave., New York 17, N. Y.

MANUFACTURERS AND DISTRIBUTORS OF BIOLAC, BETA LACTOSE, KLIM & DRYCO, BORDEN'S ICE CREAM, EVAPORATED MILK, CONDENSED MILK, HEMO, INSTANT COFFEE, FRESH MILK AND CHEESE

was about 301 million bu. compared to 290 million bu. in the 1920–29 period.

Several reasons are advanced for the decline in per capita consumption of potatoes. One is that there is today greater variety of foods to choose from in planning meals than there was years ago. A second is that potatoes have acquired an exaggerated reputation as a "fattening food," but have not been credited for the other essential nutrients besides calories which they offer, usually at low cost. Then, too, Americans have become more weight-conscious, and in reducing diets potatoes have been omitted. The final reason set forth is that many Americans today are doing less manual labor and so have less need for high-energy foods.

New Method of Refining Soybean Oil. At the Northern Regional Research Laboratory of the U.S.D.A. in Peoria, Illinois, scientists have worked out a method of refining soybean oil with citric acid which improves both its flavor and keeping quality. The citric acid combines with tiny metallic traces dissolved in the soybean oil, possibly from contact with metal containers or equipment. These minute quantities of metal hasten the development of off-flavors in the oil, if they are not deactivated by the citric acid. The soybean oil refined by this process keeps three to five times longer than that refined by current methods. The adoption of this process by industry could expand the market for soybean oil and also lower the cost of salad oil or dressing to consumers.

News of State Associations

California Dietetic Association. Dietitians in the *Bay Section* participated in an open forum broadcast on October 16 over KQW, titled "Youth Looks to the Future—The Field of Dietetics." Members of the cast included an administrative dietitian, a dietetic intern, a dietitian in industry, a high school student, and a Veterans Administration dietitian. The Bay Section donated the proceeds of its annual Christmas Party to the Children's Diabetic Camp Fund.

The September meeting of the *Los Angeles Section* was a joint meeting with the Home Economists in Business. Mary I. Barber, Home Economics Director of Kellogg Company, and Ina Lindman, Home Economics Director, Fruit Dispatch Company, were guests and speakers. In October, when the Los Angeles Section met, sales representatives of several Los Angeles firms served samples of their products. For the November meeting, Norma Young told of her work as a home economist in radio, and Cay Hillegas described merchandising problems for the Rexall Drug Company. She is responsible for booklets and magazines, copy for menus, selling campaigns for new items, and posters.

The *San Diego Section* at its September meeting heard Edwin Watkins, registered sanitarian of the San Diego City Health Department, speak on the problems of sanitation and methods of solving them. At this meeting various ideas for vocational guidance activities were also discussed. Radio transcriptions presented during the past summer were found to be effective. The San Diego Section has also been asked to contribute to the career columns in the school papers, and several members have talked to high school groups about opportunities in dietetics. Another public relations activity has been carried out by the Educational Committee, which has planned to have speakers for some of the meetings of the San Diego Dental Association.

District of Columbia Dietetic Association. Washington dietitians launched their program for the year by joining the District of Columbia-Maryland Hospital Association at their annual conference November 8 and 9 in Washington. On November 20, Dr. Orpha May Thomas, Teachers College, Columbia University, talked before a combined meeting of the dietitians and the regional restaurant association. Her address was followed by a buffet supper at which the restaurant association was host. Program plans for the remainder of the year include: a panel on nursing education; a program on diet therapy combined with community nutrition, at which the Home Economists in Business will be guests; a bingo and bridge party; an all-day meeting in April; a food administration program; and a pot-luck picnic in June.

Officers of the D. C. Dietetic Association for this year are: President, Anne Stewart Miller; Vice-President, Georgia M. Smither; Treasurer, Barbara Wetmore Creamer; and Secretary, Stella H. Gue.

Florida Dietetic Association. On December 20, the *Jacksonville Dietetic Association* held open house for friends at the home of Vera Walker. This group is sponsoring an essay contest on milk. Officers are: President, Mary Buswell; President-Elect, Carol Wheeler; and Secretary-Treasurer, Marjorie Morrison.

Miami dietitians have organized the *Miami Dietetic Association* and hold meetings once a month. At one recent meeting Dr. Ruth Clouse, University of Miami, summarized the highlights of the A.D.A. Boston convention, and Maude Forbes reported on the Florida Dietetic Association meeting in November. Officers of the Miami group are: President Helen Jane Mannon, Jackson Memorial Hospital, and Secretary-Treasurer, Eunice Grady.

The *St. Petersburg Dietetic Association* has held two fall meetings. At one, the group was entertained at the Maas Bros. tea room and enjoyed a trip through the kitchens there. At the second meeting, a report of the Florida Dietetic Association meeting was given. In January the group was hostess to Tampa dietitians. Plans are underway for participation in a radio program and also for cooperating with the Parent-Teachers Association in vocational guidance work. Officers are: President, May McBath, and Secretary-Treasurer, Estelle Nesbitt.

A year ago this spring, the Tallahassee dietitians met to organize the *Tallahassee Dietetic Association*. Hortense M. Glenn was elected Chairman, and Maxine Carter, Secretary-Treasurer. This fall and winter, two meetings have been held. At the first, Dr. Mildred Bricker, Florida State University, spoke on "The Effect on Calcium Balance of Feeding Cocoa to College Women." At the second meeting Helen Underwood, also of Florida State University, spoke on "State and County Regulations for Inspection of Public Eating Places in Florida and Leon County."

In Tampa, dietitians have made plans to talk about dietetics to senior girls at three high schools. Officers of the *Tampa Dietetic Association* are: President, Emily L. Peeler; Vice-President, Aurora Mann; and Secretary-Treasurer, Rose Messina.

Six dietitians in *Gainesville* have also laid plans for organizing a local dietetic group and hope to stimulate and maintain interest in the profession in that city.

Illinois Dietetic Association. The Illinois Dietetic Association will again participate in the Tri-State Hospital Assembly to be held May 2 to 4 in Chicago, and a program for the Dietetic Section will be planned under the Illinois Association's sponsorship. The regular meeting of the Illinois Dietetic Association will be held May 5.

In conjunction with its public relations activities, the Illinois Association has established a speakers' bureau for the purpose of making speakers available throughout the state wherever an opportunity presents itself to stimulate interest in dietetics.

Kansas-Missouri Dietetic Associations. The Missouri and Kansas Dietetic Associations will have a joint meeting in Kansas City at the same time as the Midwest Hospital Association on April 26 and 27.

The *Kansas City Dietetic Association* this year has planned its programs to include two simultaneous workshops, one dealing with therapeutic problems, and the other with administrative. At the January meeting, the therapeutic group discussed the types of foods being served on the soft diet in the hospitals in the city. It appeared that the trend is to allow almost all forms of ground meat and to discontinue the use of vegetable purées except when adding them to cream soups. The administrative workshop at the same meeting undertook to formulate standards for an administrative, therapeutic, and teaching dietitian, including educational background, experience, personal qualifications, duties and responsibilities, hours, salary, and working conditions.

Kansas City dietitians and nutritionists have cooperated in preparing a "Standard Budget" for use by social agencies in the city. It is to be used as a guide in determining the cost of keeping a family at a minimum standard of health and decency. Specifications for all budget items have been drawn up and prices were obtained from various sections of the city.

Maryland Dietetic Association. In October, the Maryland Dietetic Association was one of twenty-seven women's

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organizations to sponsor a "Women's Day Luncheon" in Baltimore. At this luncheon, those at the speaker's table included prominent Baltimore women, both historical and modern. Those of today were present in person; those of yesterday were portrayed by "stand-ins" in costume. Also seated at the speaker's table were the presidents of the sponsoring organizations. It was felt that such an affair is an excellent opportunity to contribute toward good public relations, for a great deal of information was exchanged at the smaller tables by the various associations represented.

At the February meeting of the Maryland Association, Marjorie Heseltine, Director, Nutrition Unit, U. S. Children's Bureau, was guest speaker.

Massachusetts Dietetic Association. A joint meeting of the Massachusetts Dietetic Association and the Massachusetts Home Economics Association was held February 5 at the Women's Educational and Industrial Union in Boston. The meeting was devoted to a discussion of "Opportunities in the Field of Home Economics and Dietetics." Guests for the meeting were high school vocational guidance teachers.

Montana Dietetic Association. The annual meeting of the Montana Dietetic Association was held in Great Falls on February 26. The first issue of the "Montana Dietetic Association News Letter" was distributed to members in January. It was a twelve-page mimeographed bulletin which included reports from the incoming and outgoing presidents, an announcement of the spring meeting, and a report of the A.D.A. convention in Boston. Acting-President of the Montana Association this year is Virginia Taplin. She took over the duties of this office when Gertrude Walker, elected President, resigned because she was leaving the state.

Nebraska Dietetic Association. The fall meeting of the Nebraska Dietetic Association was held in Omaha on November 3. Following a discussion of "Association Affairs" by Fern Gleiser, A.D.A. Treasurer, and reports of the A.D.A. convention in Boston, the morning speaker, James Carroll, American Gas Association, talked on "New Gas Equipment." A color film, "Where Food Is Finest," was also shown in the morning. In the afternoon, the program included two speeches: "How Public Are Public Relations?" by Cholm Houghton, Public Relations Director, Hinky-Dinky Stores; and "How Can Dietitians Help Welfare Groups with Low-Income Food Budgets?" by Philip H. Vogt, Administrator, Douglas County Assistance Bureau.

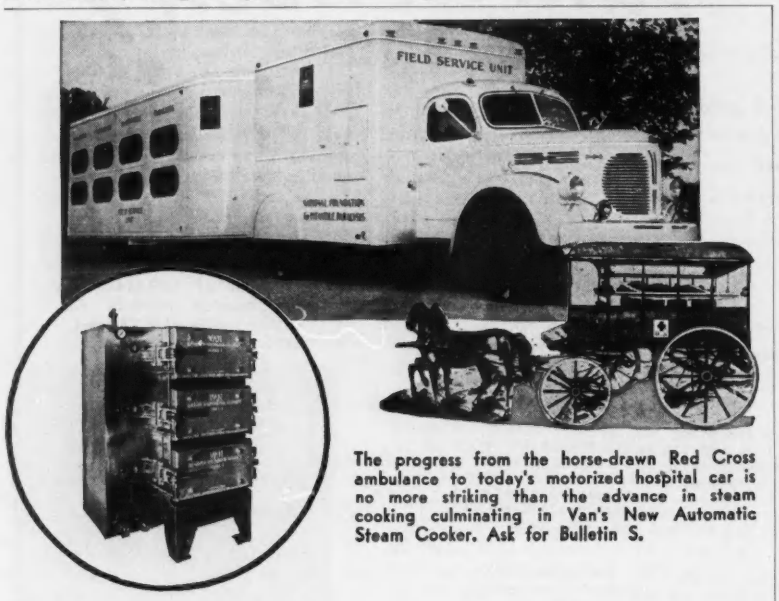
New York Dietetic Association. The *Buffalo Dietetic Association's* program for the year has included: September, a fellowship dinner; October, a demonstration of cooking and service of fish; November, reports of the A.D.A. convention; December, a Christmas party; January, a business meeting; and February, a general meeting of the Inter Club Council. In March, the Buffalo dietitians are meeting with the Buffalo Home Economics Association, and in April, there will be a joint meeting with the Rochester Dietetic Association to discuss group dynamics.

The *Rochester Dietetic Association* in October held a social meeting and picnic at the Visiting Nurses Association. At the November meeting, the speaker was Dr. Norman E. Simmons of the Dental Research Staff, University of Rochester, who spoke on "Tin Can Island." A budget council has been organized in Rochester to study food costs and to recommend a low-cost budget and a moderate-cost budget. Members of the council are representatives of the Rochester and Monroe County Nutrition Committee and are connected with agencies interested in food costs.

Ohio Dietetic Association. Plans are well under way for the Ohio Dietetic Association convention to be held in Columbus on April 1 and 2 in cooperation with the Ohio Home Economics Association.

A new revision of the Ohio Dietetic Association's *Manual for School and Institutional Lunch Rooms* came off the press in February. Past editions of this *Manual* have been widely used, and the new revision should be welcomed. Prices for the new edition are: $2 per single copy; $1.85 for three or more copies. They may be ordered from the Versailles Publishing Company, Versailles, Ohio.

Officers for the Ohio Dietetic Association this year are: President, Helen



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The sturdy three-year-old twin boys in the above photograph—Marc and Clay Cavness of Phoenix, Arizona—neither look exactly alike, nor are they duplicates in their characteristics.

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Why Nucoa is the margarine mothers by the million choose

Mrs. Jack C. Cavness, the twins' mother, is typical of the millions of high-minded young American mothers who let Nucoa margarine help them solve the problem of providing appetizing, nutritious meals at moderate cost. Mothers have *confidence* in Nucoa, for Nucoa has been top-quality margarine for over thirty years. Its makers pioneered, one by one, the important improvements that won approval for margarine from dietary experts. Nucoa was the first all-*vegetable*-oil margarine . . . the first made with vegetable oils from crops grown only within Continental United States . . . first to add Vitamin A . . . first to step up Vitamin A fortification to 15,000 U.S.P. units per pound, *guaranteed.*

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Not only is Nucoa's food value as calculated as baby's first formula, but the *uniformity* of Nucoa in pleasing texture and delicious flavor is controlled by manufacturing skill and rigid testing. 54 laboratory tests are made daily on the oil alone. And Nucoa always tastes sweet and fresh. Nucoa is freshly made the year round, on order only. There is no "storage" Nucoa!

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Mallory, University Hospitals, Cleveland; President-Elect, Gladys Mason, Huron Road Hospital, East Cleveland; Vice-President, Mary Fuqua, Ohio State University, Columbus; Secretary, Olive Walker, American Red Cross, Dayton; and Treasurer, Margaret Walsh, Welfare Federation of Cleveland.

Dietetic interns in Ohio have recently been quite active in local associations and in their own special projects. "Journal Club" discussion groups, particularly in Columbus, have been studying several subjects, including the various phases of waste control, the induction and training of dietary employees, and future plans for dietary departments.

The *Cincinnati Dietetic Association* has also been active in developing vocational guidance activities. At their December meeting, dramatized recordings by the American Gas Association, titled "An Introduction to Home Economics," and "The Field of Dietetics" were shown. Cincinnati dietitians also attended the annual meeting of the Public Health Federation on December 6. Speaker for the occasion was Dr. Louis I. Dublin of the Metropolitan Life Insurance Company, New York City.

In December, the *Cleveland Dietetic Association* provided gifts for the patients in the tuberculosis pavilion of City Hospital for Christmas. In January, Mildred Hickman, Vocational Guidance Director of the Cleveland Board of Education, spoke on "The Presentation of Job Opportunities in Dietetics."

The *Columbus Dietetic Association* in December entertained members of the Board of Education, high school counselors, and leaders of the Camp Fire Girls, Girl Scouts, and Y.W.C.A. Following the showing of the film, "Footsteps to the Future," produced by the Home Economics Department at Ohio State University, a panel discussion about the different phases of dietetics was held.

Dayton dietitians, through their Public Relations Committee, wrote and presented a radio program entitled "The Dietitian and the Diabetic Diet" during Diabetes Detection Week in December. In January, their Food Administration Section gave a program on sanitation for the City Health Department.

Oklahoma Dietetic Association. The annual spring convention of the Oklahoma Dietetic Association will be on April 8 and 9 at the Hotel Skirvin, Oklahoma City. It is planned to invite college students to be guests at a symposium.

The *Oklahoma City Dietetic Association* met in November at the Borden Company and enjoyed a trip through its plant. In December a Christmas party was held at St. Anthony's Hospital. Gifts of toys were brought to give to an orphanage.

Pennsylvania Dietetic Association. The Pennsylvania Dietetic Association will soon begin publishing "The Informer," which will carry pertinent items from the A.D.A. *Courier* and matters of state and local interest for a better informed membership. Margaret Neubert and Corinne Robinson have been named co-editors of the state bulletin and will also share responsibility for "The Informer."

The regular monthly meeting of the *Philadelphia Dietetic Association* on January 11 was devoted to Professional Education, particularly in the area of teaching student nurses. A round table panel included a discussion of nutrition and cookery, practical experience, practical teaching aids, and diet therapy. During the question period which followed, the need for public relations work with the nursing schools was emphasized. An announcement was made at this meeting that the Philadelphia dietitians have been asked by the Philadelphia County Medical Society to cooperate at a joint meeting some time in the future. It was felt that this request was a result of past public relations work with the Society, and it was decided to accept the invitation. On January 26, the Philadelphia Association held a card party at the Hahnemann Medical College.

Tennessee Dietetic Association. The *Memphis Dietetic Association* has invited the home economics teachers in Memphis and Shelby County to visit the Dietary Department of Kennedy Veterans Administration Hospital. Following this, arrangements will be made for the teachers to bring their classes to other hospitals in Memphis and to learn more about the profession of dietetics.

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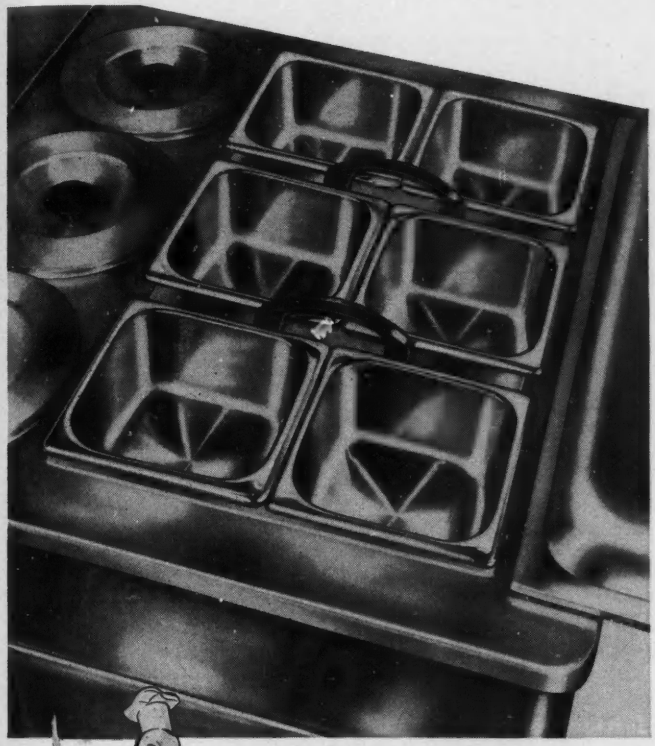
Association Activities

"Why a Dietetic Internship?" This new A.D.A. folder which came off the press late in January and was first announced in the February issue of the JOURNAL, has within a short time become very popular. Free copies of "Why a Dietetic Internship?" have been sent to officers of state and local dietetic associations and to directors of approved dietetic internships. Heads of home economics departments in accredited colleges and universities have received two to fifteen copies each, depending upon the size of the school, to distribute within their departments and also to other departments, such as the school placement bureau, the library, and the counseling office. The leaflet will receive further publicity through mailings sent to editors of magazines, to allied associations, to administrators in institutions offering approved dietetic internships, and to the officers of the branches of the National Vocational Guidance Association.

Letters of congratulations on the leaflet and orders for more copies have been received from many A.D.A. members and from heads of home economics departments who have already found the material useful. The interns at the Milwaukee County Institutions have sent copies to the colleges from which they graduated.

The prices of "Why a Dietetic Internship?" are as follows:

1 to 25 copies..... 5 cents per copy
Over 25 copies..... 75 cents per 25.



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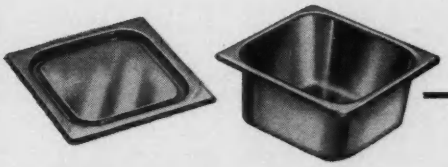

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The dishes are made with square corners to provide greater capacity.

The edges are extended to form handles facilitating removal of the dish.

The Ideal Diet Tray contains 6 removable food receptacles mounted in a strong metal rack. The entire assembled unit is interchangeable with meat tray in all Ideal Food Conveyors. The receptacles are 5½"x5½"x2½" deep providing 1¾ qt. capacity each.

Individual covers are supplied at no extra cost, if desired. All receptacles are interchangeable. All nest for storage.

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Vocational Guidance Committee Needs Pictures. The Vocational Guidance Committee of A.D.A. has some rather ambitious plans to add to the Kodachrome exhibit collection which was started last year and which is being used now for loan to the state and local dietetic associations. Many of you know how difficult it is to get even one good picture! If any A.D.A. member knows of a Kodachrome slide showing something of the activities of the dietitian, the Committee would appreciate having it submitted, with the possibility of reproducing it.

Black and white glossy prints are also needed by the Committee to help in developing ideas for pictures for future booklets on the dietetic profession. Any such pictures may be sent to the A.D.A. office for consideration.

A.D.A. Exhibits with Chicago Dental Society. The Midwinter Meeting of the Chicago Dental Society is said to be the largest dental meeting in the country. This year it was held at the Stevens Hotel in Chicago, February 7 to 10. The exhibit A.D.A. presented consisted of three sample meals for a teen-age boy. These meals were set up in the form of wax models, attractively arranged on colorful china. A three-fold leaflet, mimeographed in green on white paper, entitled "Good Food, Good Health" was distributed to the exhibit's visitors. In the leaflet were given sample menus for teen-age boys and girls and the Recommended Dietary Allowances for these groups. Members of the Chicago Dietetic Association "manned" the booth to answer questions and observe the reactions of visitors to the exhibit.

Girl Scouts Learn about Dietetics. The January issue of *The American Girl*, the official publication of the Girl Scouts in the U. S., carried an article describing opportunities in the dietetic profession. Entitled "Recipe for a Career" and written by an A.D.A. member, Doris H. Zumsteg, the article presents in an interesting manner the unlimited opportunities offered in the various phases of dietetics. The A.D.A. office has received a number of requests from Girl Scouts throughout the country for further information as a result of this article.

A.D.A. Represented at Conferences. A.D.A. has been invited to send representatives to the *Second National Conference of the U.S. National Commission for UNESCO*, to be held in Cleveland from March 31 to April 2. The conference will include reports on the substantial progress made since the first meeting in Philadelphia two years ago and will bring into focus those major areas of UNESCO's program where widespread individual participation is needed to realize the high aims of UNESCO in behalf of peace and the welfare of mankind.

The A.D.A. has also been invited to send two delegates as its representatives to the 53rd annual meeting of the *American Academy of Political and Social Science*, to be held in Philadelphia, April 8 and 9. Margaret Madden and Evelyn Carpenter, both of Philadelphia, will attend this meeting in behalf of A.D.A.

News of Advertisers and Exhibitors

Gerber's has just put a new baby food on the market—strained sweet potatoes. The new product is said to be exceptionally high in vitamin A content in the form of carotenes, one 4½-oz. can providing more than twice the infant's Recommended Dietary Allowance for this vitamin. One can of strained sweet potatoes also provides approximately one-half the dietary allowance for iron, and about two-fifths that for ascorbic acid for infants, according to Edna Mae McIntish, Gerber's nutritionist.

John Sexton & Co., on February 1 opened a new sales and warehousing branch in Boston in order to serve their New England customers better. Although Sexton have specialized in the exclusive supplying of hotels, restaurants, and institutions for over sixty-five years, they recently entered the consumer market and their products are now being offered by many independent retail grocers.

A new publication by the *Paper Cup and Container Institute* is titled *Portion Control and Food Cost Manual*. Written by George L. Wenzel, it points up the importance of portion control in food cost accounting and profit-making, and emphasizes the uses to which paper containers can be put to control portion size. The booklet is filled with tables and charts which give yields; total, per-serving, and per-ounce costs; as well as recommended sizes of portion cups. Appetizers, salads, sauces and relishes, fruits and vegetables, desserts, and meats are all covered.

Ad. Seidel & Son, Inc., have recently put on the market "Wheatmeal Cutlets." These pre-cooked fillets, made from wheat gluten, are packed in mushroom broth from which gravy may be made. The broth is flavored with vegetable seasonings and enriched with brewer's yeast. Resembling small steaks, the new product can be fried in 5 min. to serve as steaks, chops, breaded patties, or burgers. It can also be used in stews and chili. The cutlets come packed in No. 10 cans containing approximately seventy cutlets. By serving two cutlets to a serving, the cost would be about 7½ cents per serving. The company offers the following chemical analysis of this new product:

NUTRIENTS	PERCENTAGE
Protein (N × 6.25)1.....	13.4
Carbohydrate (as starch)	5.9
Fat (ether extract).....	0.4
Total minerals.....	1.8
Crude fiber.....	0.1
Calories.....	0.8 per gram (average)

Onondaga Pottery Company has announced four new patterns of Syracuse China for hospital use—Whitfield, Montrose, Colonial, and Graymere. The first three feature floral patterns, while Graymere is edged in cool gray with intense black and white forming a foil. The new patterns have been designed and planned to provide wide diversity of decorative schemes.

"Junket" Brand Foods has published a booklet, *The Importance of Rennet in Infant and Adult Nutrition*. Nicely designed and printed in two colors, this booklet gives information on the approximate composition of Rennet desserts and on its use in infants' and childrens' diets as well as adults' diets. Directions for preparing special-type milks are also given.

Armour and Company is distributing two new quantity recipe booklets. One contains recipes for fresh frosted lamb cuts, the other for fresh frosted boneless veal. Buying information and cooking timetables are included in both booklets. The printing is done so that the sheets may be cut or torn along a simulated perforated line leaving 4 by 6 in. recipes which may be filed in a card file.

A new dishwasher and new lines of mixers and peelers have been introduced by *G. S. Blakeslee & Co.* The new small dishwasher has been christened "The Niagara, Jr." It uses the same paddle wheel used in the company's larger machines, which throws a large volume of water and washing solution over the dishes with tremendous force. The company claims that two and a half times the volume of water per horsepower is forced over the dishes than is possible with sprays or nozzles. It is a two-tank, sink type washer. Dishes are cleaned in the left-hand tank and rinsed in the right, or vice versa. A swivel faucet with hot and cold taps permits use of the equipment as a regular sink when it is not being used as a dishwasher.

The new *Blakeslee* peelers are vertically designed with a sink-high, four-position door to permit direct discharge of vegetables into the sink. The manufacturer claims that the abrasive side-wall and peeling disc give more efficient peeling with a possible saving of up to 20 per cent of the vegetable. The new line of mixers features variable speed control, and the beaters travel around the bowl as they rotate, in what is called "planetary action." This is supposed to produce a smoother, more even mixing.

Source of Vitamin A

Work done at Vassar College and reported to the Electron Microscope Society of America by Edith A. Roberts and Mildred A. Southwick has shown that vitamin A is formed in the plant and then built into carotene and stored as such. Thus it appears that vitamin A is really a procarotene, rather than carotene being a provitamin A.—*New York Times, March 7, 1948.*